FRINOVSKAYA, I.V.

Changes in the blood coagulation system in hemorrhagic thrombocythemia. Probl. gemat. i perel. krovi 8 no.6: 21-27 Je'63 (MIRA 17:4)

1. Iz gematologicheskoy kliniki (zav. - prof. M.S. Dul'tsin) TSentral'nogo ordena Lenina instituta gematologii i perelivaniya krovi (direktor - dotsent A.Ye. Kiselev) Ministerstva zdravookhraneniya SSSR.

FRINOVSKAYA, I.V.

Minutes of the meeting of the Hematology Section of the Moscow Therapeutics Society of October 30, 1962. Probl. gemat. i perel. krovi 8 no.11:62 N '63.

Minutes of the Hematology Section of the Moscow Therapeutics Society of Novemeber 27, 1962. Ibid.:63

Minutes of the meeting of the Hematology Section of the Moscow Therapeutics Society of December 25, 1962. Ibid.:64

(MIRA 17:12)

FRINOVSKAYA, I.V.

Minutes of the meeting of the Hematology Section of the Moscow Therapeutics Society of January 29, 1963. Prob. gemat. i perel. krovi 9 no.4:56-58 Ap '64. (MIRA 17:11)

FRUNOVSKAYA, I.V.

Minutes of the meeting of the Hematology Section of the Moscow Therapeutics Society of March 26, 1963. Probl. gemat. i perel. krovi 9 no.4:59-60 Ap '64. (MIRA 17:11)

REYSHAKHRIT, L.S.; BEZRUKOVA, T.P.; FRUMKINSKAYA, K.G.

Influence of aromatic amines on the discharge of cobalt and cadmium ions on a dropping mercury electrode. Vest. LGU 19 no.22: 132-135 '64 (MIRA 18:1)

ARBUZOV, B.A.; FRINOVSKAYA, V.A.

Dichloride of d-Δ^3-carene. Zhur. Obshchey Khim. 22, 1444-45 '52. (MLRA 5:8)
(CA 47 no.13:6379 '53)

1. Kazan. Sate Med. Inst.

ARBUZOV, B.A., akademik; FRINOVSKAYA, V.A.

Oxides of some α-pinene derivatives and their isomerization.
Dokl. AN SSSR 112 no.3:427-429 Ja '57. (MLRA 10:4)

1. Nauchno-issledovatel'skiy khimicheskiy institut im.
A.M. Butlerova pri Kazanskom gosudarstvennom universitete im.
V.I. Ul'yanova-Lenina.
(Pinene) (Isomerization)

FRINOVSKAYA, V. A., Cand Chem Sci -- (diss) "Preparation and study of isomeric transformations of oxides of certain derivatives of d α-pinene." Kazan', 1958. 11 pp (Sci Res Chem Inst im A. M. Butlerov; Kazan' State Med Inst), 120 copies (KL, 18-58, 96)

α = alpha

79-28-4-59/60

AUTHORS: Abramov, V. S. , Vil'chinskaya, A. R. , Krinovskaya, V. A.

TITLE: In Memoriam Andrey Ivanovich Lun'yak (Pamyati Andreya Ivanovicha Lun'yaka)

PERIODICAL: Zhurnal Obshchey Khimii,1958,Vol.28, Nr 4,pp.1118-1119 (USSR)

ABSTRACT: On October, 15th, died after long serious disease the 76-year-old Professor for Chemistry at the Medical Institute Kazan', Andrey Ivanovich Lun'yak. He was a pupil of A. M. Zaytsev. Andrey Ivanovich Lun'yak was born on December 17th, 1881, in Petersburg. After finishing high school in Odessa he entered the Military Medical Institute in Petersburg. Then he came as army surgeon to Kazan'. Already 2 years later he left the army and devoted his life to chemistry. He came as laboratory assistant to the Laboratory for Organic Chemistry at the Kazan' University which stood under the leadership of A. M. Zayetsev. Here he passed - thanks to mediation of the university - his pharmacist examination with special permission. In 1908 A. I. Lun'yak was sent to Berlin for 2 years where he worked in the laboratory of E. Fischer. Then he was appointed private docent of the Kazan' University, short time

Card 1/3

In Memoriam Andrey Ivanovich Lun'yak

afterwards assistant professor for organic chemistry and agricultural analysis in Alexandriya, where he finished his dissertation. From 1916 till 1924 A. I. Lun'yak was professor for physiological chemistry at the new-opened university of Perm'. He was simultaneously dean of the faculty for physics and mathematics and of the medical faculty and later representative of the rector of the university. In 1924 he was appointed professor for the chair for technical chemistry of the Kazan' University, two years later rector of the university. From 1930 on Lun'yak was professor for organic chemistry of the technological faculty of the Chemical-Technological Institute of Kazan'. 6 years later he was appointed leader of the chair for organic chemistry at the Medical Institute of Kazan, where he held lectures for many years. In 1952 A. I. Lun'yak had to retire because of his bad health, was, however, always very interested in the life at the Institute. Andrey Ivanovich Lun'yak was a very good organizer and his energy was inexhaustible. He also took part actively in the development of the chemical industry of the Tatar Republic. Party and government estimated highly his services and he was awarded the Lenin Order.

Card 2/3 His pupils and assistants will always remember him.

79-28-4-59/60

In Memoriam Andrey Ivanovich Lun'yak

A list of the scientific works of the deceased is given. There is 1 figure.

Card 3/3

VIL'CHINSKAYA, A.R.; PRINOVSKAYA, V.A.

Synthesis of esters of phosphonic, monothio-, and dithiophosphoric acids containing the myrtenyl radical. Zhur.ob.khim. 30 no.8: 2581-2585 Ag '60. (MIRA 13:8)

1. Kazanskiy gosudarstvennyy universitet i Kazanskiy gosudarstvennyy meditsinskiy institut.
(Phosphonic acid)
(Phosphoric acid)

FRINOVSKIY, A.A.

For the titel of Factory of Communist Labor. Put' i put.khoz. 5 no.6:21-22 Je '61. (MIRA 14:8)

1. Normirovshchik shpalopropitochnogo zavoda, st. Rava-Russkaya, L'vovskoy dorogi.

(Railroads--Employees)

FRINOVSKIY, M., inzhener-mayor

Information on radiation reconnaissance must go directly to the battalion. Voen. vest. 42 no.6:36 Je '62. (MIRA 15:6)
(Radiation--Measurement)

FRINOVSKIY, V.S.

Conduction anesthesia in gynecologic surgery. Akush.gin. no.2: 3-6 Mr-Ap '50. (CIML 19:2)

1. Of the Institute of Obstetrics and Gynecology (Director -- L.G.Stepanov) of the Ministry of Public Health USSR.

FRINOVSKIY, V. S.

Certain data on diagnosis of ovarian cancer. Akush. gin. no.3:11-15 May-June 1951. (CIML 21:1)

1. Of the Institute of Obstetrics and Gynecology (Director -- L. G. Stepanov) of the Ministry of Public Health USSR.

FRINOVSKIY, V.S.

Conduction (regional) anesthesia in vaginal surgery. Akush. i gin. no.5:59-63 S-O '54. (MLRA 7:12)

1. Iz instituta akusherstva i ginekologii (dir. L.G.Stepanov, nauchnyy rukovoditel' prof. P.A.Beloshapko) Ministerstva zdravookhraneniya SSSR.

(VAGINA, surgery, anesth., regional)
(ANESTHESIA, REGIONAL, in vaginal surg.)

FRINOVSKIY, Vyachslav Sergeyevich

FRINOVSKIY, Vyachslav Sergeyevich (Sci Res Inst of Obstetrics and Gynecology of the Min of Health USSR), Academic degree of Doctor of Medical Sciences, based on his defense, 24 October 1955, in the Council of the 2nd Moscow State Med Inst imeni Stalin, of his dissertation entitled: "Conductor anesthesia (own methods) in gynecological operations and its practical application."

For the Academic Degree of Doctor of medical Sciences

Byulleten' Ministerstva Vysshego Obrazovaniya SSSR, List No. 7, 31 March 1956
Decision of Higher Certification Commission Concerning Academic Degrees and Titles.

JPRS 512

FRINOVSKIY, V.S.,; SAVITSKAYA, L.K.

Surgical treatment of vesicovaginal fistulas. Akush. i gin. 32 no.1:46-51 Ja-F '56 (MLRA 9:6)

1. Iz Nauchno-issledovatelskogo instituta akusherstva i ginekologii (dir.L.G. Stepanov) Ministerstva zdravookhraneniya SSSR.
(FISTULA, VESICOVAGINAL, surg.)

FRINOVSKIY, V.S., prof., doktor med.nauk

Modification of panhysterectomy in malignant neoplasms of the adnexa uteri. Akush. i gin. 34 no.5:99-103 S-O '58 (MIRA 11:10)

1. Iz Nauchno-issledovatel'skogo instituta akusherstva i ginekologii (dir. dotsent L.G. Stepanov) Ministerstva zdravookhraneniya RSFSR.

(HYSTERECTOMY,
panhysteroctomy, modified technic, in cancer of uterus & adnexae (Rus))

FRINOVSKIY, V.S., prof., doktor med.nauk

Diagnosis and surgical treatment of endometriosis of the uterus (adenomyosis). Akush.i gin. 35 no.5:43-46 S-O '59. (MIRA 13:2)

1. Iz nauchno-issledovatel'skogo instituta akusherstva i ginekologii (direktor - dotsent L.O. Stepanov) Ministerstva zdravookhraneniya RSFSR.

(ENDOMETRIOSIS)

PRINOVSKIY, V.S.

Combined anesthesia in gynecological operations. Akush.i gin. 36 no.4:33-37 Jl-Ag '60. (MIRA 13:12)
(GENITOURINARY ORGANS—SURGERY) (LOCAL ANESTHESIA)

FRINOVSKIY, V.S. (MOSCOW, USSR)

Modifkation der erwieterten Radikaloperation des Collumcarcinoms unter Erhaltung der Overien bei jungen Frauen.

Report submitted for the 3rd World Congress, Intl Federation on Gyneology and Obstetrics, Vienna, Austria, 3-9 Sep 1961.

GOFMAN, G.Ye., prof.; ZHELEZNOV, B.I., kand. med. nauk; KLENITSKIY, Ya.S., prof.; LEL'CHUK, P.Ya., prof.; MARKINA, V.P., dots.; NOVIKOVA, L.A., prof.; PETROVA, Ye.N., prof.; POKROVSKIY, V.A., prof.; FRINOVSKIY, V.S., prof.; PERSIANINOV, L.S., prof., otv. red.; IL'IN, I.V., red.; LYUDKOVSKAYA, N.I., tekhn. red.

[Multivolume manual on obstetrics and gynecology] Mnogotomnoe rukovodstvo po akusherstvu i ginekologii. Moskva, Medgiz. Vol.5.[Tumors of female genitalia] Opukholi zhenskikh polovykh organov. 1962. 314 p. (MIRA 16:8)

1. Chlen-korrespondent AMN SSSR (for Novikova, Persianinov).
(GENERATIVE ORGANS, FEMALE--TUMORS)

FRINOVSKIY, Vyacheslav Sergeyevich; MAZUROVA, V.M., red.; BUKOVSKAYA, N.A., tekhn. red.

[Regional anesthesia in gynecological surgery] Regionarnaia anesteziia pri ginekologicheskikh operatsiiakh. Moskva, Medgiz 1963. 108 p. (MIRA 17:2)

FILIPPOV, D.P., inzhener (Moskva); FRINSHTEYN, I.F., inzhener (Moskva)

Laying a 900 mm diameter steel conduit. Stroi.pred.neft.prom. 1 no.6: 21-22 Ag '56. (Petroleum--Pipelines) (MLRA 9:9)

FRINT, Tibor, dr.

Present status of the origin of the human voice.
Fulorrgegegyogyaszat. 9 no. 2:84-90 Je '63.

1. Az Orvostovabbkepzo Intezet Ful-, orr-, gegegyogyaszati Tanszekenek (tanszekvezet Surjan Laszlo dr. egyetemi tanar) kozlemenye.

(VOCAL CORDS) (VOICE)

FRINT, Tibor, dr.

Causes and clinical aspects of functional voice disorders. Fulorrgegegyogyaszat 10 no.2:72-78 Ap'64

1. Az Orvostovabbkepzo Intezet Ful-orr-gegegyogyaszati Tanszekenek Budapest (Tanszekvezeto: Surjan, Laszlo, dr, egyetemi tanar) kozlemenye.

FRINTA, Jindrich, MUDr.

Use of adhesive plaster traction in the treatment of fractures of the arm in children. Cesk. pediat. 11 no.5:363-365 May 56.

1. Chirurgicke oddel. krajske detske nemocnice v Brne, prednosta prim. Dr. V. Mazal.
(ARM, fractures,
in child., adhesive plaster traction (Cz))
(FRACTURES,
arm in child., adhesive plaster traction (Cz))

FRINTA, Jindrich, MUDr.

Personal system in the evaluation of injuries in children.
Acta chir. orthop. traum. cech. 23 no.3:153-156 June 56.

1. Chir. oddeleni Krajske detske nemocnice v Brne, prednosta prim. Dr. V. Mazal.
(WOUNDS AND INJURIES, in inf. & child,
evaluation method (Cz))

FRINTA, Jindrich

Actinomycosis of the cecum in a 13-year-old girl. Cesk. pediat. 12 no.12: 1090-1091 5 Dec 57.

1. Chirurgicke oddeleni Krajske nemocnice v Brne prednosta prim. Vladimir Mazal.

(ACTINOMYCOSIS, in inf. & child
cecum, med. & surg. ther. (Cz))
(CECUM, dis.
actinomycosis in child, med. & surg. ther. (Cz))

EXCERPTA MEDICA Sec.6 Vol.12/5 Pediatrics May 1958

FRINTA J.

1313. RECURRENT FRACTURES IN CHILDHOOD - Refrakturen im Kindesalter - Frinta J, Chir. Abt., Kinderkrankenh. Brno - ZBL. CHIR. 1957, 82/30 (1241-1249) Tables 2 Illus. 14

Discussion of 63 cases of recurrent fracture seen in children aged 2-15 within 5 yr. Secondary fractures never occurred in the old, ossified fracture line. Again and again it was the callus which, still immature after brief immobilization or weakened by incorrect treatment, collapsed. These recurrent fractures are therefore referred to as callus fractures. The first group included 24 patients in whom fracture of the immature callus was caused by an injury sustained within a few days after removal of the cast. The 2nd group included 39 cases with an interval of more than 40 days between the first and the 2nd fracture. In this group delayed callus maturation and calcification was discovered. The increased disappearance of calcium and the absence of calcification were attributed to acidification of the fracture region. This acidosis from oxygen deficiency involves vasospasms due to reflex irritation. Alkaline phosphatase activity is impeded and calcification consequently becomes deficient. Foremost among the therapeutic measures are vascular care and reflex block by means of antihistamine. (IX, 7)

FRIS, Ivan

"Machines help to think" by Miroslav Valach. Reviewed by Ivan Fris. Aplikace mat 8 no.3:224 '63.

FRIS, Martin

"Solved tasks from mathematics, arithmetics and algebra" by K. Hrusa and J. Sedlacek. Reviewed by Martin Fris. Aplikace mat 7 no.4:329-330 '62.

FRIS, P.

Light polarization conditions as reflected in complex numbers.
Coll Cz Chem 30 no.5:1366-1372 My '65.

1. Institut fur makromolekulare Chemie, Tschechoslowakische Akademie der Wissenschaften, Prague. Submitted May 28, 1964.

FRIS, T.

Yugoslavia (430)

Technology - Periodicals

Aluminum oxide in aluminum and aluminum alloys and its determination. p. 260. TEHNICKI PREGLED. (Croatia. Uprava za unapredenje proizvodnje pri privednom savjetu) Zagreb. (Bimonthly technical journal issued by the Production Improvement Administration of the Economic Council) No. 5, 1951.

East European Accessions List, Library of Congress Vol. 2, No. 6, June 1953. Unclassified

YUGO.

Investigation of the distribution of some important impurities in technical aluminum. A. Lahodny, F. Nonveiller, and T. Prij (Inst. fuke metale, Zagreb, Yugoslavia). *Tehnički preged* (Zagreb), *Posebno Inst. fuke metale* (Special issue Inst. Light Metals) Oct. 1952, 24–32.—The detection of local clumps of metallic and nonmetallic impurities and gases in Al castings and strips by macrographic, radiographic, and semimicroradiographic methods is described and numerous illustrations are presented. N. P.

FRIS, Zdenek

Electronic voltage stabilizer. Sdel tech 11 no. 12:
466-467 D '63.

L 1033-66

ACCESSION NR: AP5025945 CZ/0039/65/026/005/0273/0278

AUTHOR: Pospisil, Jiri, (Engineer); Fris, Zdenek (Engineer)

TITLE: Measurement of the response of thermionic tubes in the positive grid voltage region

SOURCE: Slaboproudy obzor, v. 26, no. 5, 1965, 273-278

TOPIC TAGS: thermionic tube, electron tube grid, electronic measurement

ABSRACT: [Authors' Russian and English summaries, modified]: The article treats the problems and basic principles of measuring the response of thermionic tubes in the region of positive grid voltage. The method of dc pulses is described in detail and the conditions on the plate and control grid of the tube to be measured are analyzed. Orig. art. has: 15 figures, 15 formulas and 1 graph.

ASSOCIATION: [Pospisil] VAAZ, Brno; [Fris] TVS, Jizni Morava

SUBMITTED: 09Nov64	ENCL: 00	SUB CODE: EC
NR REF SOV: 000	OTHER: 002	JPRS

Card 1/1

FRIS-GACESA, T.: MARIN, T.

Colorimetric determination of vanadium in bauxite and red mud, p. 130. TEHNICKI PREGLED. (Centar za naucnu dokumentaciju i produktivnost NR Hrvatske) Zagreb. Vol. 7, No. 4, 1955.

SOURCE: East European Accessions List, (EEAL) Library of Congress, Vol. 5, No. 8, Aug. 1956.

FRIS-GACESA, Tea, ing.; KORELIC, Olga, ing.

Control and regeneration of baths for the phosphate treatment of aluminum and aluminum alloys. Kem ind 10 no.8:205-209 Ag '61.

1. Institut za lake metale, Zagreb.

FRIS-GACESA, T.; BAN-COK, M.

Volumentric determination of lead in aluminum and aluminum alloys. p. 132. TEHNICKI PREGLED. (Centar za naucnu dokumentackju i produktivnost NR Hrvatske) Zagreb. Vol. 7, No. 4, 1955.

SOURCE: East European Accessions List, (EEAL) Library of Congress, Vol. 5, No. 8, Aug. 1956.

FRIS-GACESA, Tea, ing.; KORELIC, Olga, ing.

Control and regeneration of baths for the phosphate treatment of aluminum and aluminum alloys. Kem ind 10 no. 8:205-209 August 61.

1. Institut za lake metale, Zagreb.

FRISCH, O.R., prof. (Cambridge); ZAMORI, Zoltan [translator]

A new source of energy? Fiz szemle 7 no.2/3:73-74 Ap-Je '57.

1. Harvelli Atomkutato Kozpont (for Frisch).

FRISCH, S.

"Application of windmills in hydraulic engineering." p 151
(Gospodarka Wodna, Vol 13 No 4 Apr 53 Warszawa)

SO: Monthly List of East European Accessions, Vol XII No 9 Library of Congress Sept 53 Uncl

FRISCHMANN, Gabor

Earthing and safety problems of wire telecommunication engineering establishments. Hir techn 11 no.4:121-128 Ag '60.

1. Magyar Posta.

FRISCHMANN, Gabor

Nomogram for the conversion of noise power into noise voltage and signal/noise ratio. Hir techn 14 no.4:149-150 Ag '63.

1. Magyar Posta.

FRISCHMANN, [illegible]; SCHAFER, A.; RUSSEL, H.

A new series of heavy-duty oil-poor circuit breakers for middle voltages. Elektrotechnik 19 no.10:278-282 [illegible] '64.

1. IHH, Berlin (for Frischmann). 2. ZBK B. VEB E.W.S., Dresden Branch (for Schafer). 3. VEB SKL, Bad Liebenau (for Russel).

FRISCIC, Vinko, Dr.

Infectious food poisoning caused by Salmonella bacteria. Lijec. vjes. 77 no.1-2:113-122 Jan-Feb. '55.

(SALMONELLA INFECTIONS,
food pois., in Croatia (Ser))
(FOOD POISONING, etiol. & pathogen.
Salmonella, in Croatia (Ser))

YUGOSLAVIA

ERISCIC, Dr Vinko, Hygiene Institute (Higijenski zavod), Bjelovar.

"An Outbreak of Salmonellosis typhi murium Originating in the Meat of a Sick Calf."

Zagreb, Liječnicki Vjesnik, Vol 85, No 4, April 1963, pp 403-408.

Abstract: [Author's English summary modified] The second outbreak of Salmonellosis typhi murium to be recorded in the Bjelovar region occurred in July 1955 and was traced to the meat of a calf which had probably been infected in its lifetime. Nine families with a total of 39 individuals were exposed, but only 12 persons fell ill. The way in which the meat was prepared was apparently a factor; those affected had eaten the veal stewed with peas and rice. Salmonella infections have become a serious public-health problem in Yugoslavia in recent years. Two tables, 14 Western and Yugoslav references.

1/1

ACC NR: AT7005644 SOURCE CODE: UR/0367/66/004/003/0625/0635

AUTHOR: [illegible], I. V.; Smorodinskiy, Ya. A.--Smorodinsky, J. A.; Uglirzh, M.--Uhlir, M.; Frish, I.--Fris, I.

ORG: Joint Institute for Nuclear Research (Ob"yedinennyy institut yadernykh issledovaniy)

TITLE: Symmetry groups in classical and quantum mechanics

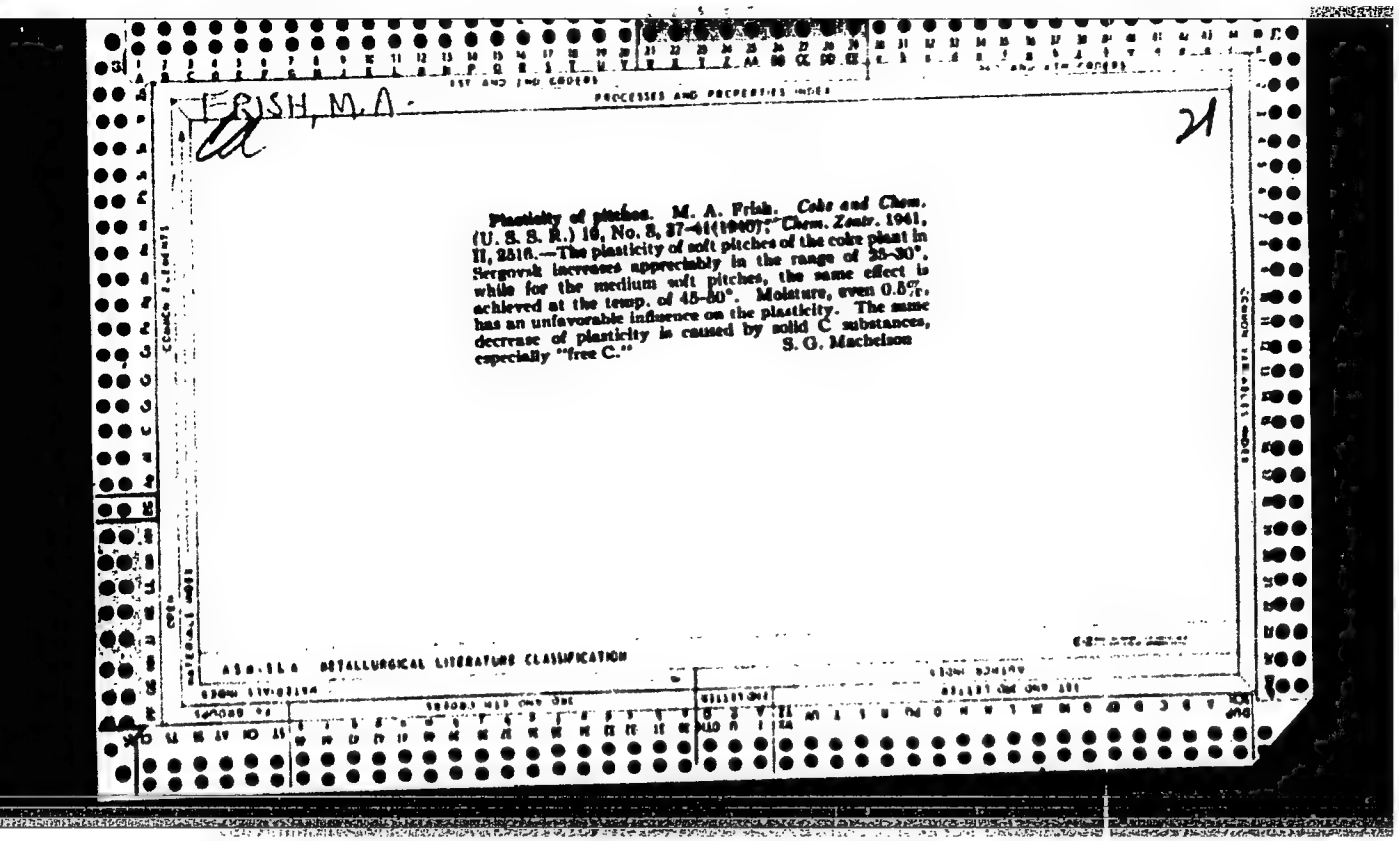
SOURCE: Yadernaya fizika, v. 4, no. 3, 1966, 625-635

TOPIC TAGS: quantum mechanics, quantum theory

ABSTRACT: All potentials having a dynamic symmetry group in a two-dimensional world are found. Classical and quantum motion in these potentials are investigated and it is shown that in all cases the symmetry group is SU(2). The previously known ... potentials with higher symmetry (Coulomb potential, harmonic oscillator) are obtained as special cases. The authors thank V. Mandrosov for his research of the motion in these potentials. Orig. art. has: 45 formulas. [JPRS: 38,764]

SUB CODE: 20 / SUBM DATE: 22Jan66 / ORIG REF: 005 / OTH REF: 008

Card 1/1



FRISH, M.A.

21

PROCESSES AND PROPERTIES INDEX

Plasticity of pitches. M. A. Frish. *Koks and Chem.* (U. S. S. R.) 10, No. 8, 37-41(1940). *Chem. Zentr.* 1941, II, 2816.—The plasticity of soft pitches of the coke plant in Sergovsk increases appreciably in the range of 25–30°, while for the medium soft pitches, the same effect is achieved at the temp. of 45–50°. Moisture, even 0.5%, has an unfavorable influence on the plasticity. The same decrease of plasticity is caused by solid C substances, especially "free C." S. G. Machelson

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

FRISH, M.A.; SMIRNOVA, A.S.; DORZHIYEVA, M.N.

Effect of vacuum pressing on the properties of graphite electrodes.
TSvet. met. 36 no.9:54-58 S '63. (MIRA 16:10)

L 52300-65 EWG(j)/EWP(e)/EWT(m)/EPF(c)/EWP(1)/EWG(m)/EPR/T/EWP(b) Pr-4/Ps-4/Peb
DIAAP RWH/NW/WH
ACCESSION NR: AP5008807 S/0080/65/038/003/0537/0545

AUTHOR: Frish, M. A.; Smirnova, A. S.; Dorzhiyev, M. N. 32 B

TITLE: Examination of homogeneity in graphite electrodes using a radioactive sulfur isotope

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 3, 1965, 537-545

TOPIC TAGS: graphite electrode, tracer technique, sulfur, radioactive isotope

ABSTRACT: Radioactive isotope S^{35} was used in a study of optimizing the process of production of graphite electrodes. Use of S^{35} makes it possible to follow changes in the binder and other components of mold composition during the pressing and roasting operations. Pressing of graphite electrode molds on a piercing hydraulic press gives compact massive blocks. Such operation is most advantageous economically. However, it would be desirable to remove the scraps from the die after each charge. This requirement should be taken into account when considering modernization of the pressing operation. The piercing presses give molds with improved binder concentration within the 2-mm outer layer. Calcining in both open

Card 1/2

L 52300-65
ACCESSION NR: AP5008807

and closed furnaces causes binder redistribution which improves the mechanical strength of the lower mold portions and increases their apparent density. The upper mold portions exhibit the reverse behavior. An excessive binder redistribution is avoided effectively by using the optimal heating rate required for converting binder into semicoke. Orig. art. has: 2 figures and 5 tables.

ASSOCIATION: none

SUBMITTED: ENCL: 00 SUB CODE: GC, MP

NO REF SOV: 006 OTHER: 002

llc

Card 2/2

FRISH, M.A.; SMIRNOVA, A.S.; DORZHIYEV, M.N.

Study of the uniformity of graphitized electrodes using a radioactive sulfur isotope. Zhur. prikl. khim. 38 no.3: 537-545 Mr '65. (MIRA 18:11)

1. Submitted January 5, 1963.

S/133/63/000/001/005/011
A054/A126

AUTHORS: Dekhanov, N. M., Volkov, V. F., Engineers, Kravchenko, V. A., Candidate of Technical Sciences, Frish, M. I., Engineer

TITLE: Putting into operation a large-capacity covered ferro-alloy smelter

PERIODICAL: Stal', no. 1, 1963, 41 - 44

TEXT: The first covered smelters for producing manganese silicate grades (Симн 14, Симн 17/Simn14 and Simn 17) were put into operation in the Soviet Union in 1962. First a conventional iron-smelter of 10,000 kw capacity was converted for this purpose. Its crown was made of slanting refractory concrete segments (250 mm thick, 50 tons in weight), clamped into a 600 x 300 mm annular reinforced concrete frame. The concrete used (grade"150")had a refractory capacity of 1,000°C and consisted of 330 kg/m^3 liquid glass (density: 1.38), 40 kg/m^3 sodium fluo-silicate, 577 kg/m^3 chamotte (in the form of finely crushed additive, 50% of which passes through a screen with 4,200 mesh/cm^2), 770 kg/m^3 small-grained filling material (with a grain size up to 5 mm, 15 - 20% minus 0.14 mm), 600 kg/m^3 large-grained filling material (20 - 5 mm fraction). The moisture content of the sodium fluo-silicate and of the small-grained additive should not exceed

Putting into operation a large-capacity...

1.5 weight % prior to concreting. These components must be very accurately proportioned (± 2%). Several types of feeding chutes were tested made of Ст.0(St.0) and 1Х18Н9Т (1Kh18N9T) grade or cast of ЭИ-283 (EI-283) steel, finally of grade"150" concrete with a refractory capacity of 1,300°C, containing 350 kg/m^3 liquid glass (density: 1.38), 24 kg/m^3 sodium flourosilicate, 500 kg/m^3 finely crushed magnesite powder and 700 kg/m^3 chamotte gravel (10 - 20 mm). The service life of these chutes was about 35 days. At present the chutes are reinforced by stainless steel, 2 mm in diameter. The furnace charging is continuous and fully automatic and takes place by means of bunkers, ЛДА-12 (LDA-12) type weight-proportioning devices, including an electromagnetic vibrator and weighing belts. The charging mechanism can be set for any required capacity by regulating the vibrator. Removal and cleaning of the exhaust gases is carried out by a two-stage process, involving a pipe-system and scrubbers. According to NIIOGAZ calculations, the amount of gas in the second stage of cleaning (at a furnace-capacity of 7,600 kw) is 1970 standard m^3/hour and contains 18.05% CO_2, 60 - 72.7% CO and 0.0 - 2.29% O_2. The dust content of the removed gas after the first cleaning stage is 5 - 10 gr/standard m^3, which decreases to 0.1 - 0.0238 gr/standard m^3.

Card 2/3

Putting into operation a large-capacity...

S/133/63/000/001/005/011
A054/A126

The undisturbed operation of the electrodes is ensured by making their fully welded coating of 2 mm thick iron. The diameter of the electrodes is 830 mm, their current density 7 a/cm^2. The change from the conventional to the new technology adapted for the converted furnaces must take place with great care. The charge must be fed in small batches around the electrodes, the level of the charge must be 600 - 700 mm for 8 hours, the furnace capacity must be kept low, but there should be a maximum load on the electrodes, i.e. they must penetrate deeply, almost as far as the bottom. For this purpose, after the furnace is put into operation, the amount of small coke in the first two charges must be 20 - 30% lower than prescribed. Improper furnace operation can be observed immediately from the drop in CO concentration and increase in the H_2 content of the gases, indicating water leakage from the cooling system, the critical H-content being 12%. If the pressure under the crown exceeds 8 - 10 mm water column, the reserve gas-system starts operating while the other one is being cleaned. There are 3 figures.

Card 3/3

SAPKO, A.I., kand.tekhn.nauk; DOBROV, V.P., kand.tekhn.nauk; DEM'YANETS, L.A., inzh.; DEKHANOV, N.M., inzh.; VOLKOV, V.F., inzh.; KRAVCHENKO, V.A., inzh.; BOYTSOV, L.I., inzh.; SEMENOVICH, B.V., inzh.; FRISH, M.I., inzh.

Investigating power regulators with electromechanical and electrohydraulic drives on ferroalloy refining furnaces. Stal' 22 no.4:321-324 Ap '62. (MIRA 15:5)
(Electric furnaces)

SHOLOKHOVA, Ye.D.; FRISH, M.S.

Luminosity of the crepuscular sky in the region of 1 micron. Dokl. AN SSSR 105 no.6:1218-1220 D '55. (MLRA 9:4)

1.Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gosudarstvennogo universiteta imeni A.A.Zhdanova.
(Sky, Color of) (Sunset phenomena)

39292
S/048/62/026/007/021/030
B125/B104

24.6710

AUTHORS: Startsev, G. P., and Frish, M. S.

TITLE: Measurement of the arc temperature between iron electrodes from self-reversed lines[1]

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 7, 1962, 927-929

f

TEXT: The temperature of a d-c arc was determined by measuring the intensity of the self-absorbed spectral lines. According to H. Bartels (Z. Phys., 127, 243 (1950)), the intensity of the self-reversal maxima can be calculated from the intensity of a black body by taking into account the inhomogeneity of the arc. Under these conditions the maximum temperature at the arc axis is given by

$$Y_m(p) = 0{,}736 + 0{,}264\,p^3,$$

$$p = \frac{6}{\pi}\operatorname{arc\,ctg}\frac{M_{rp}^2}{\sqrt{1+2M_{rp}^2}}.$$

Card 1/3 [1] see S/048/62/026/007/022/030

Measurement of the arc temperature ...

$$T_m = \frac{T_s}{1 + \frac{kT_s}{h\nu} \ln [MY_m(p)]}, \qquad (2).$$

$M_{rp} = \sqrt{ev_i/evh}$ † holds for lines whose lower terms are considerably higher than the ground state. $v_{i,k}$ * are the excitation potentials of the upper and lower levels. If the broadening of the lines is caused by electrons, then T_m is slightly smaller than when calculated according to (2). The intensities of the self-reversal maxima were determined from 8 (later from 4) lines of the iron spectrum by means of a spectrograph with plane grating. All lines studied are asymmetrical, (obviously because of the asymmetrical light source), with the maximum on the long-wave side. The width of the entrance slit was taken into account by a correction of 100-120°K. The errors of 20-25% in the determination of the absolute intensities give rise to an error of 5 to 6% in the temperature of the central part of a d-c arc: $T_m = (4560 \pm 200)$°K at U = 350 v and I = 2.2 a, and $T_m = (5070 \pm 200)$°K at U = 110 v and I = 5 a. These values show that the

Card 2/3 † ABSTRACTED CORRECTLY, BUT SHOULD READ $\sqrt{2V_i/2V_h}$; * Should be $V_{i,h}$

Measurement of the arc temperature ...

present method can be applied to arc-type light sources. There are 1 figure and 2 tables.

Card 3/3

ACCESSION NR: AP4035470 S/0051/64/016/005/0724/0728

AUTHOR: Frish, M.S.; Startsev, G.P.

TITLE: Results of some studies of the spectroscopic characteristics of a plasmatron

SOURCE: Optika i spektroskopiya, v.16, no.5, 1964, 724-728

TOPIC TAGS: plasmatron, plasma source, light source, spectroscopy source, plasma temperature, plasma jet, argon

ABSTRACT: Although plasma jet (or stream) generators are now fairly extensively used as sources in analytic and scientific spectroscopy, not enough is known regarding their spectral characteristics. The purposes of the present work were to investigate the processes of entry of the anode and cathode material into the discharge, to determine the jet temperature and to elucidate the character of the discharge from the nozzle. The experiments were carried out using a slightly modified version of a plasmatron of the type described by M.Margoshes and B.F.Scribner (Spectrochem. Acta.,14,138,1959) and V.D.Artamonov, E.I.Granovskiy,and P.A.Koka (Trudy* KazIMS, No.2,1960). The design provided for interchange of the nozzles (the nozzle serves as the cathode). The cooling gas, introduced tangentially to the chamber walls, was ap-

Card 1/3

ACCESSION NR: AP4035470

gon, containing less than 0.2% impurities. The measurements were carried out for current strengths from 15 to 30 amperes and gas flow rates from 360 to 1600 liters per hour, i.e., in the range of common operating conditions. The electrodes were of copper, carbon or iron. The spectrograms were photographed (and subsequently scanned with a microphotometer) by means of a spectrograph with a plane 600 lines/mm grating and a focal length of 4 meters (reciprocal dispersion about 4.1 Å/mm). In addition to spectrograms, there were obtained time-resolved oscillograms (output of a photomultiplier) of the radiation from the plasma jet. Analysis of the spectrograms indicated that there are present in the jet spectrum the lines of argon and the cathode material, but no lines of the anode material. The values of the excitation temperature (determined with reference to the intensities of Fe I lines) are of the order of 5000°K; the temperature values deduced for the constricted jet from the 2 mm diameter nozzle lie in the range from 11 400 to 14 300°K. The electron and argon atom and ion concentrations are evaluated on the basis of the temperature. It is concluded that a plasma jet generator of the given type is a good source of high temperature argon plasma, which is discharged from the nozzle in a state close to thermodynamic equilibrium. "In conclusion, the authors express their gratitude to Ye.D.Mishchenko for making available the photoelectric equipment." Orig.art.has: 6 formulas, 4 figures and 2 tables.

Card 2/3

ACCESSION NR: AP4035470

ASSOCIATION: none

SUBMITTED: 29Jul63	DATE ACQ: 22May64	ENCL: 00
SUB CODE: ME, OP	NR REF SOV: 008	OTHER: 002

Card 3/3

PROKOF'YEV, V.K.; NIKONOVA, Ye.I. GRUZDEV, G.F.; FRISH, G.S.

Oscillator strengths for the FeI spectrum. Izv. Krym. astrofiz. obser. 31:281-324 '64. (MIRA 17:9)

1. Gosudarstvennyy opticheskiy institut (for Nikonova, Gruzdev, Frish).

ACC NR: AP7004138 SOURCE CODE: UR/0051/67/022/001/0019/0023

AUTHOR: Frish, M. S.

ORG: none

TITLE: Using a plasma jet generator to determine line transition probabilities in the argon spectrum

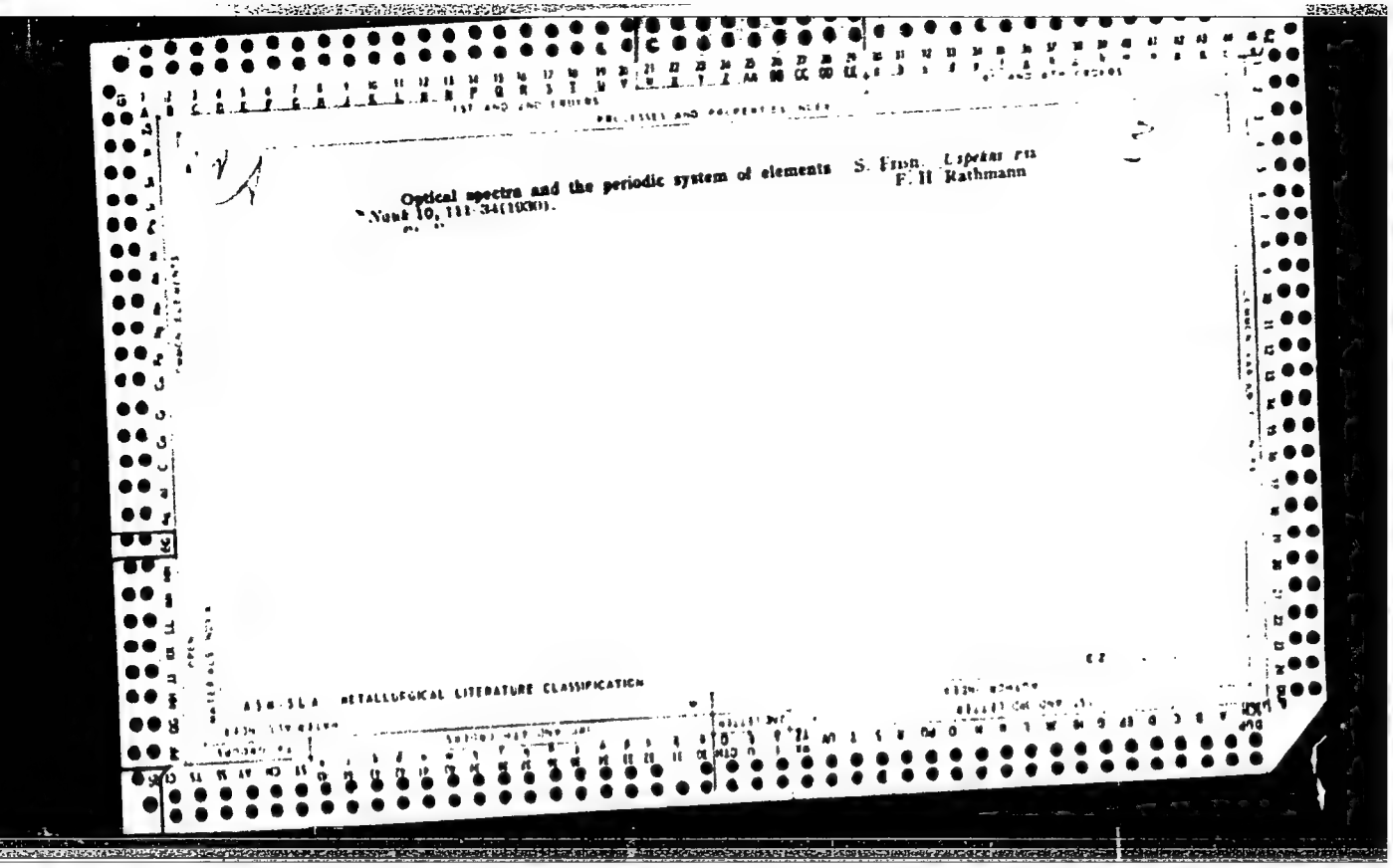
SOURCE: Optika i spektroskopiya, v. 22, no. 1, 1967, 19-23

TOPIC TAGS: plasma jet, argon, ~~plasma~~, plasma generator, ~~argon~~ line spectrum, ~~spectrum~~ line transition

ABSTRACT: Absolute probabilities of line transition in the arc spectrum of argon were determined for the 450—390-nm region, using a plasma jet as the source of excitation. The decrease in ionization potential was then determined within the 10,000—15,000K temperature range. The results obtained were then compared with those obtained by other authors. Orig. art. has: 1 figure and 4 tables. [SP]
[Author's abstract]

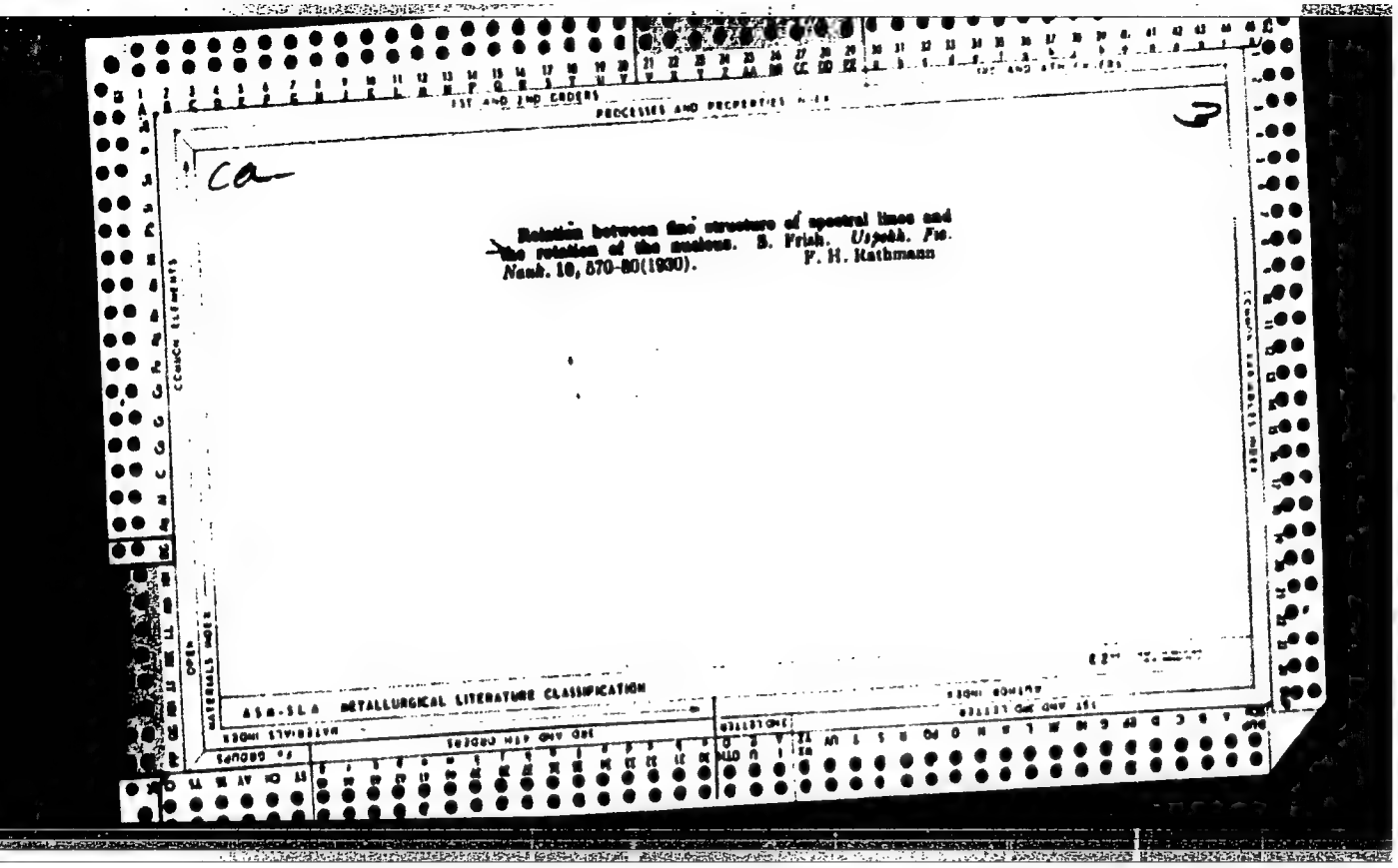
SUB CODE: 20/SUBM DATE: 19Aug65/ORIG REF: 001/OTH REF: 011/

Card 1/1 UDC: 539.184:546.293

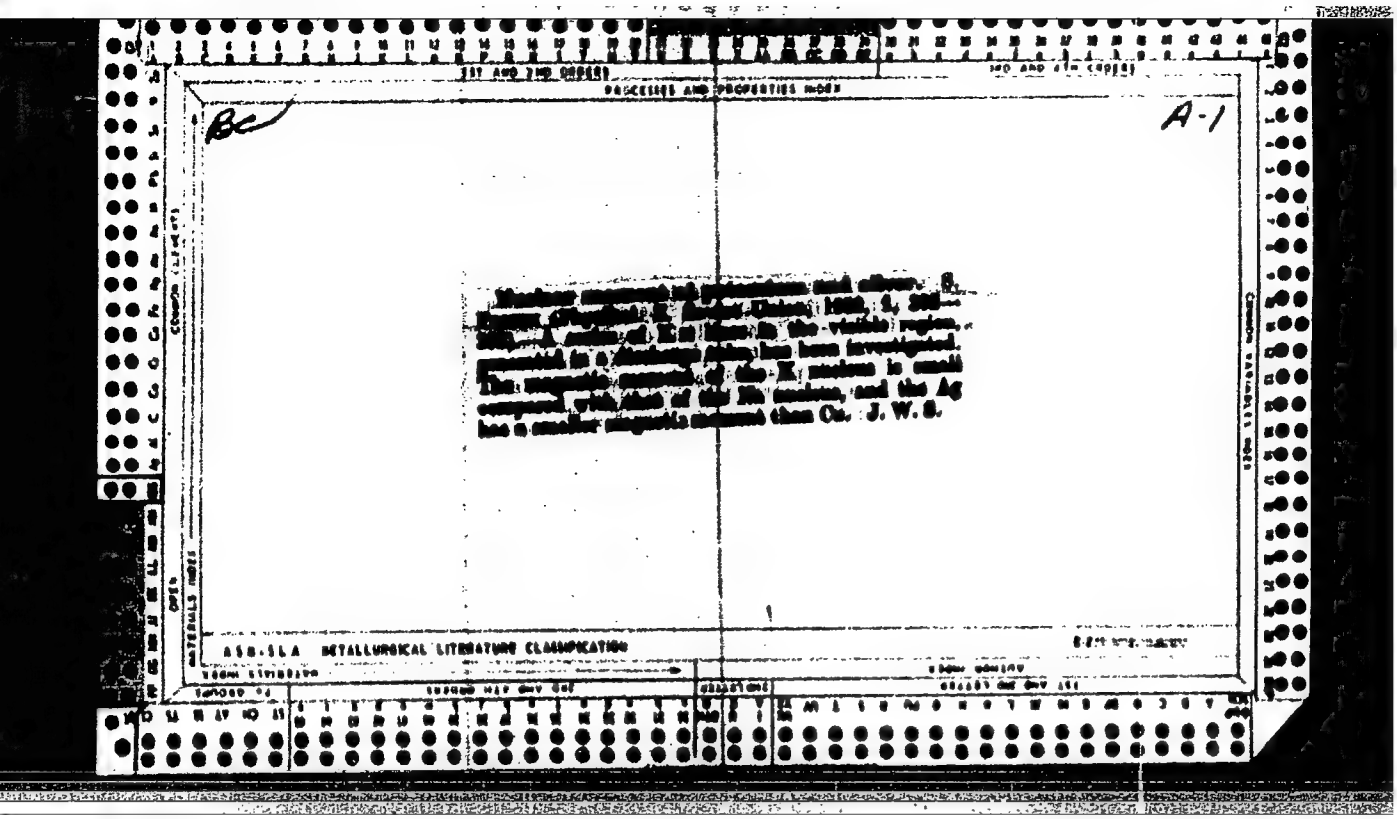


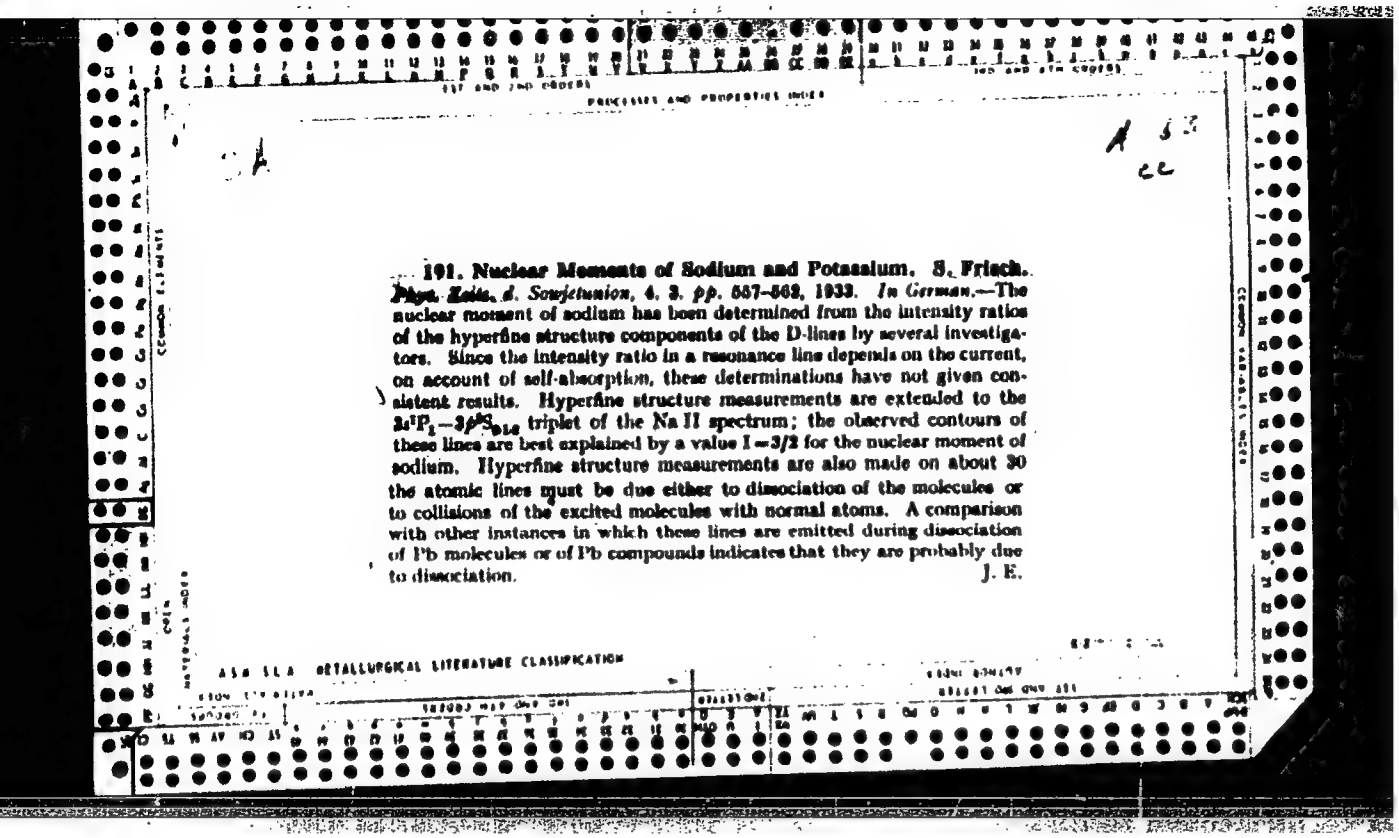
Optical spectra and the periodic system of elements S. Finn. Uspekhi fiz
F. H Rathmann
Nuna 10, 111-34(1930).

A56:SLA METALLURGICAL LITERATURE CLASSIFICATION

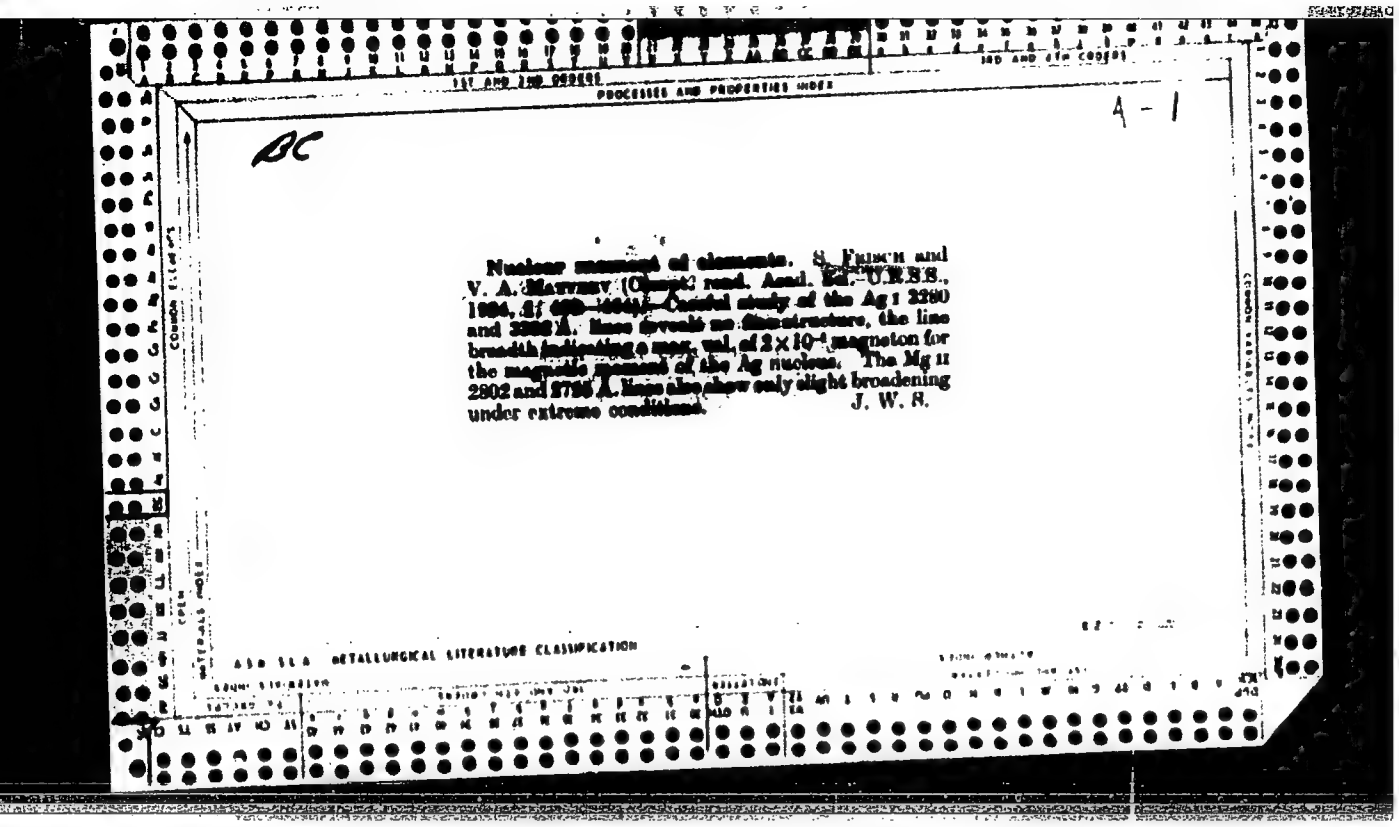


Relation between fine structure of spectral lines and the rotation of the nucleus. S. Frish. *Uspekh. Fiz. Nauk.* 10, 570–80(1930). F. H. Rathmann





191. **Nuclear Moments of Sodium and Potassium.** S. Frisch. *Phys. Zeits. d. Sowjetunion*, 4, 3, *pp.* 557–562, 1933. *In German.*—The nuclear moment of sodium has been determined from the intensity ratios of the hyperfine structure components of the D-lines by several investigators. Since the intensity ratio in a resonance line depends on the current, on account of self-absorption, these determinations have not given consistent results. Hyperfine structure measurements are extended to the $3s^1P_1 - 3p^3S_{2,1,0}$ triplet of the Na II spectrum; the observed contours of these lines are best explained by a value $I = 3/2$ for the nuclear moment of sodium. Hyperfine structure measurements are also made on about 30 the atomic lines must be due either to dissociation of the molecules or to collisions of the excited molecules with normal atoms. A comparison with other instances in which these lines are emitted during dissociation of Pb molecules or of Pb compounds indicates that they are probably due to dissociation. J. E.



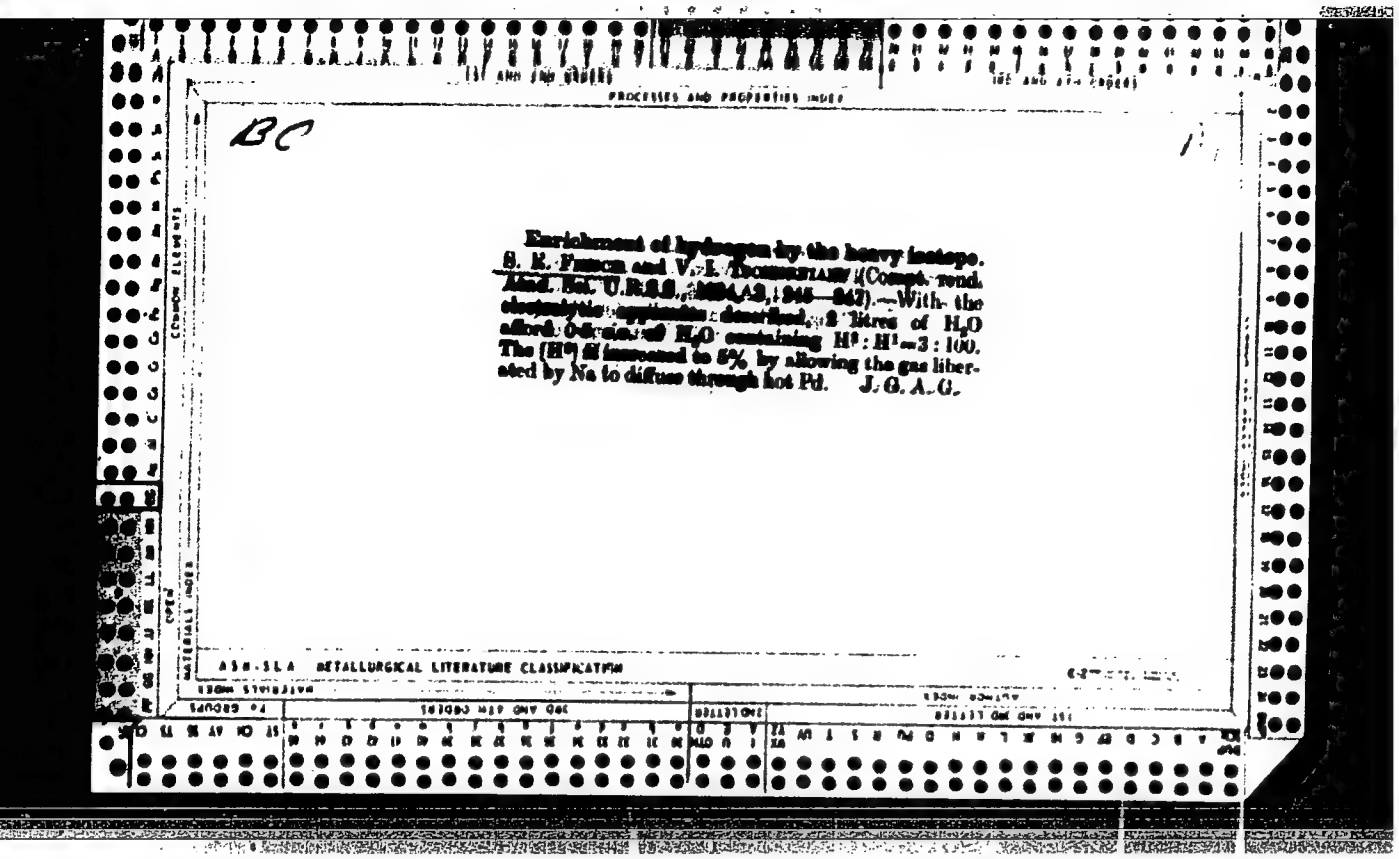
PROCESSES AND PROPERTIES INDEX

A-1

BC

Nuclear moment of elements. S. Frisch and V. A. Matveev (Compt. rend. Acad. Sci. U.R.S.S., 1934, 3 [8] 629–634).—Careful study of the Ag I 3280 and 3382 Å. lines reveals no fine structure, the line breadth indicating a max. val. of 2×10^{-4} magneton for the magnetic moment of the Ag nucleus. The Mg II 2802 and 2795 Å. lines also show only slight broadening under extreme conditions. J. W. S.

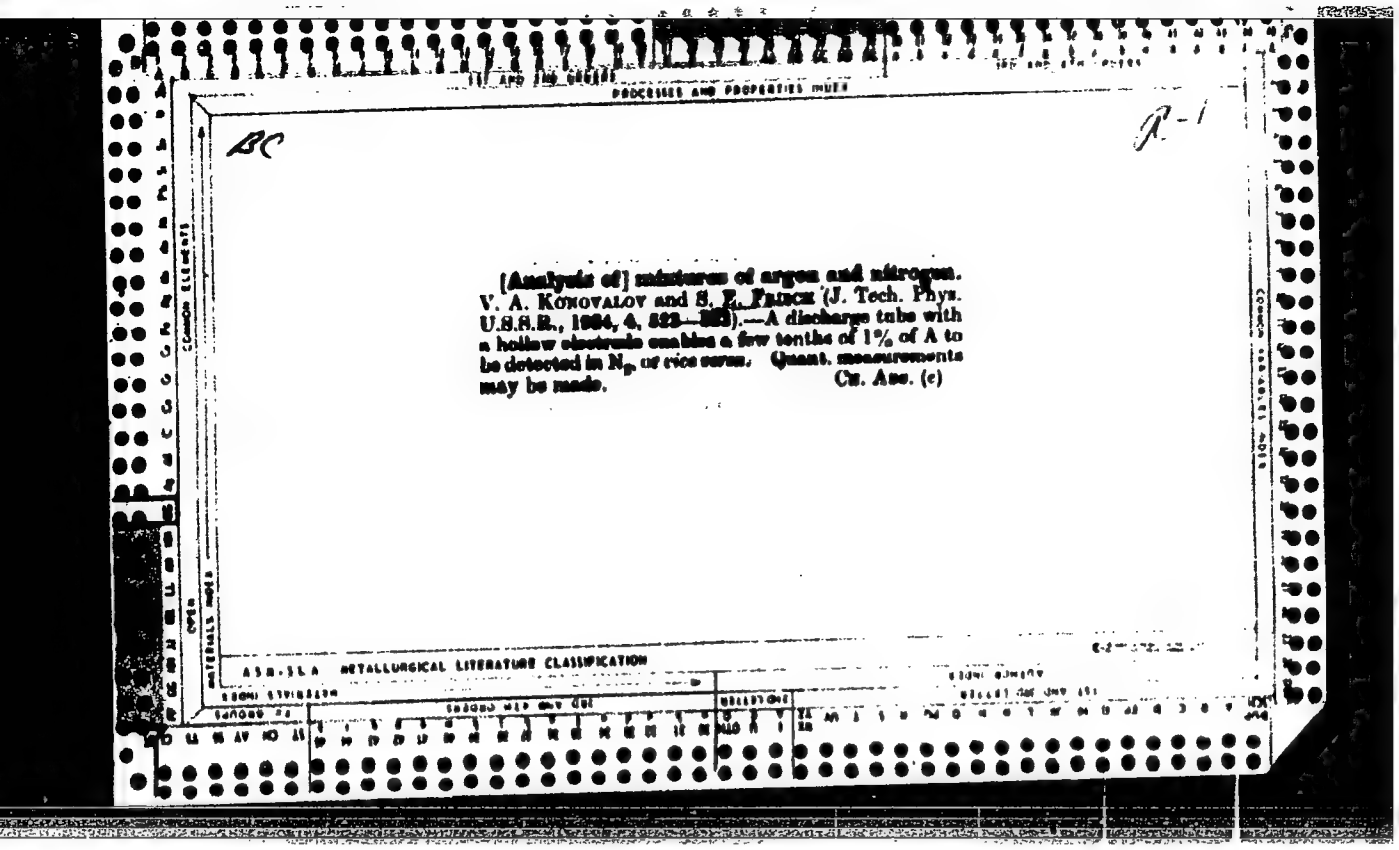
ASM SLA METALLURGICAL LITERATURE CLASSIFICATION



BC

Enrichment of hydrogen by the heavy isotope. S. K. Pimen and V. L. Tsimmerman (Compt. rend. Acad. Sci. U.R.S.S., 1954, 94, 845—847).—With the electrolytic apparatus described, 2 litres of H_2O afford 0·5 c.c. of H_2O containing $H^1 : H^2 = 3 : 100$. The H^2 is increased to 5% by allowing the gas liberated by Na to diffuse through hot Pd. J. G. A. G.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

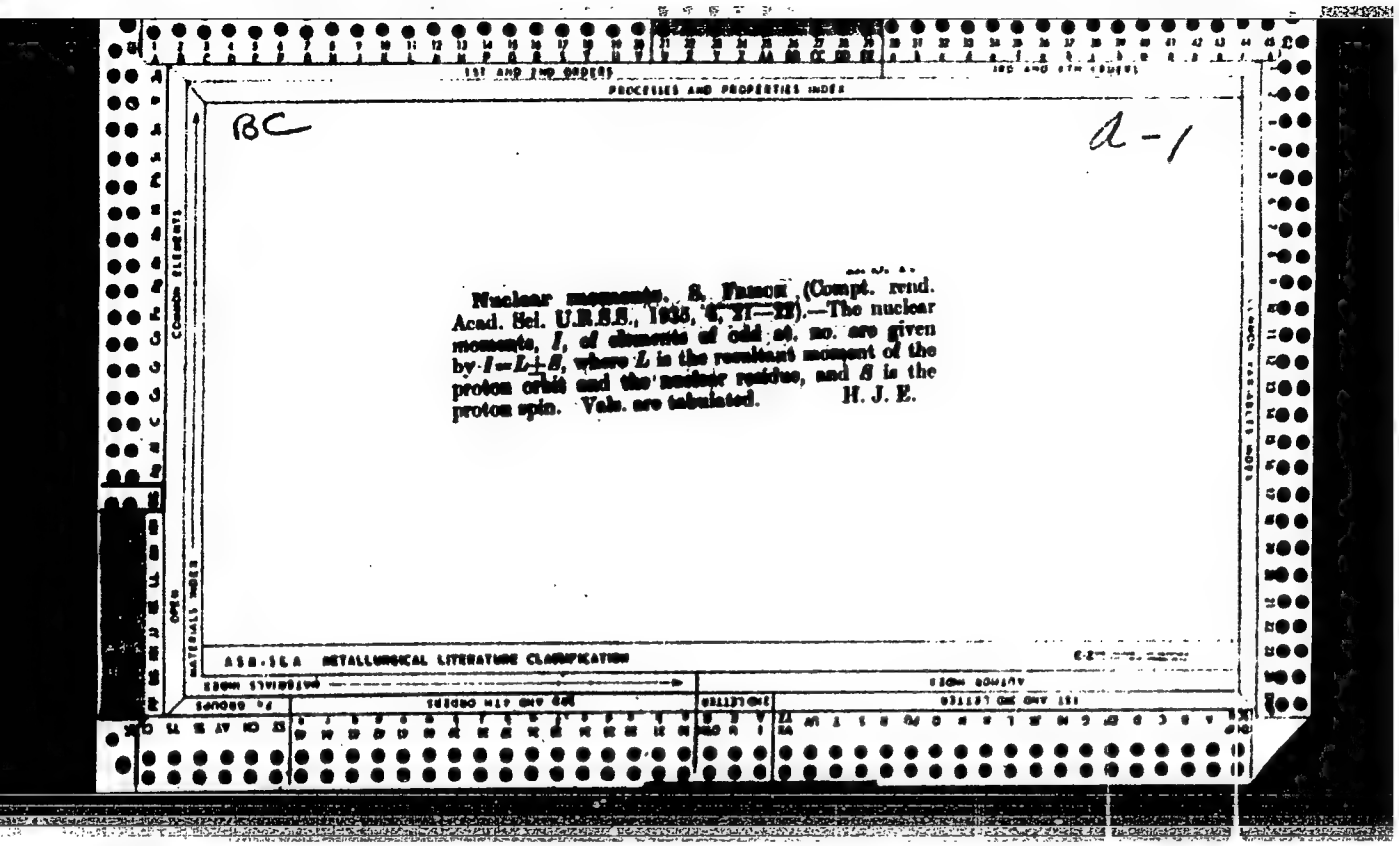


BC

A-1

[Analysis of] mixtures of argon and nitrogen. V. A. Konovalov and S. E. Frisch (J. Tech. Phys. U.S.S.R., 1934, 4, 823—833).—A discharge tube with a hollow electrode enables a few tenths of 1% of A to be detected in N_2, or vice versa. Quant. measurements may be made. Ch. Abs. (c)

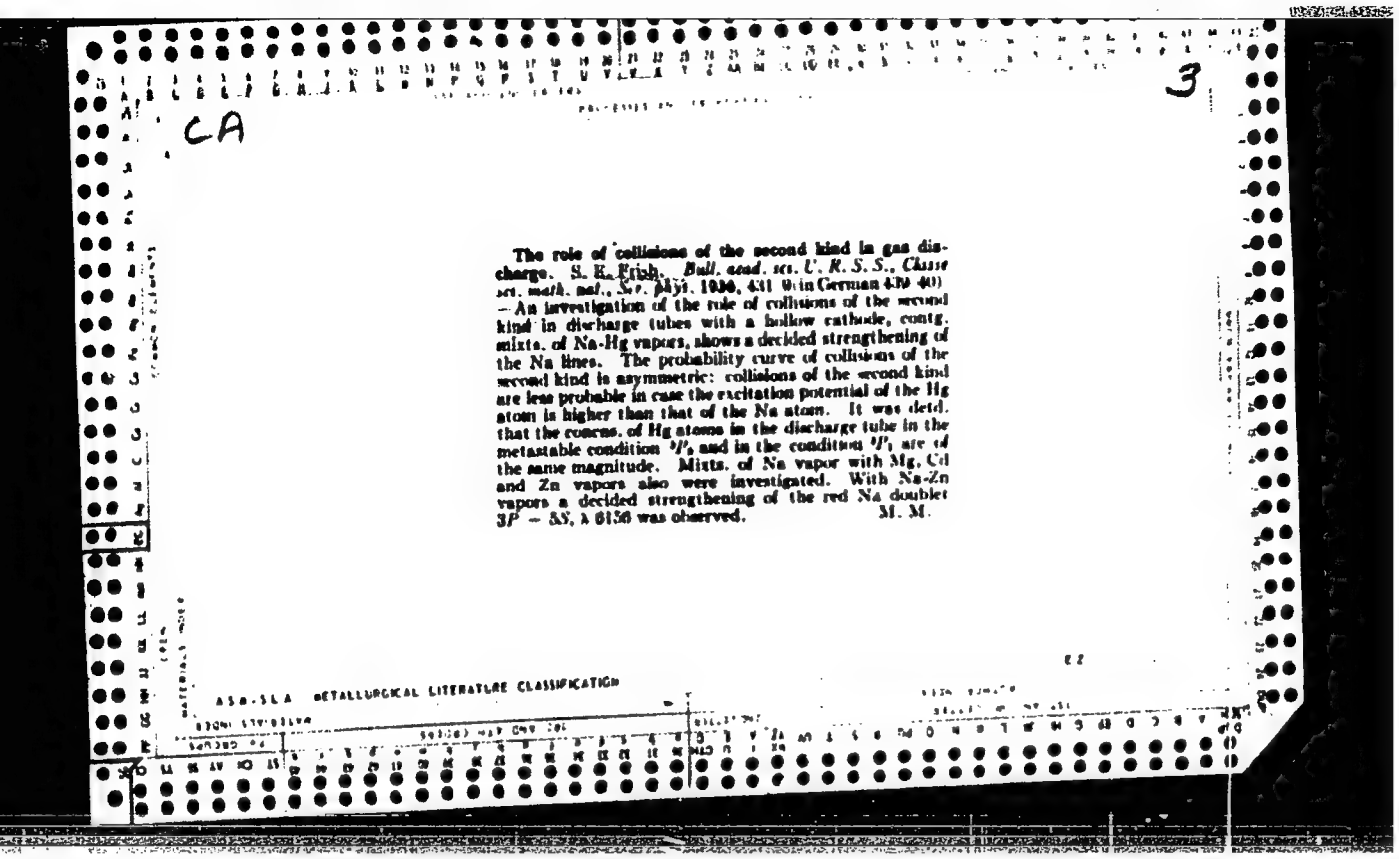
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



BC

a-1

Nuclear moments. S. Frisch. (Compt. rend. Acad. Sci. U.R.S.S., 1935, 4, 21—22).—The nuclear moments, I, of elements of odd at. no. are given by $I=L\pm S$, where L is the resultant moment of the proton orbit and the nuclear residue, and S is the proton spin. Vals. are tabulated. H. J. E.

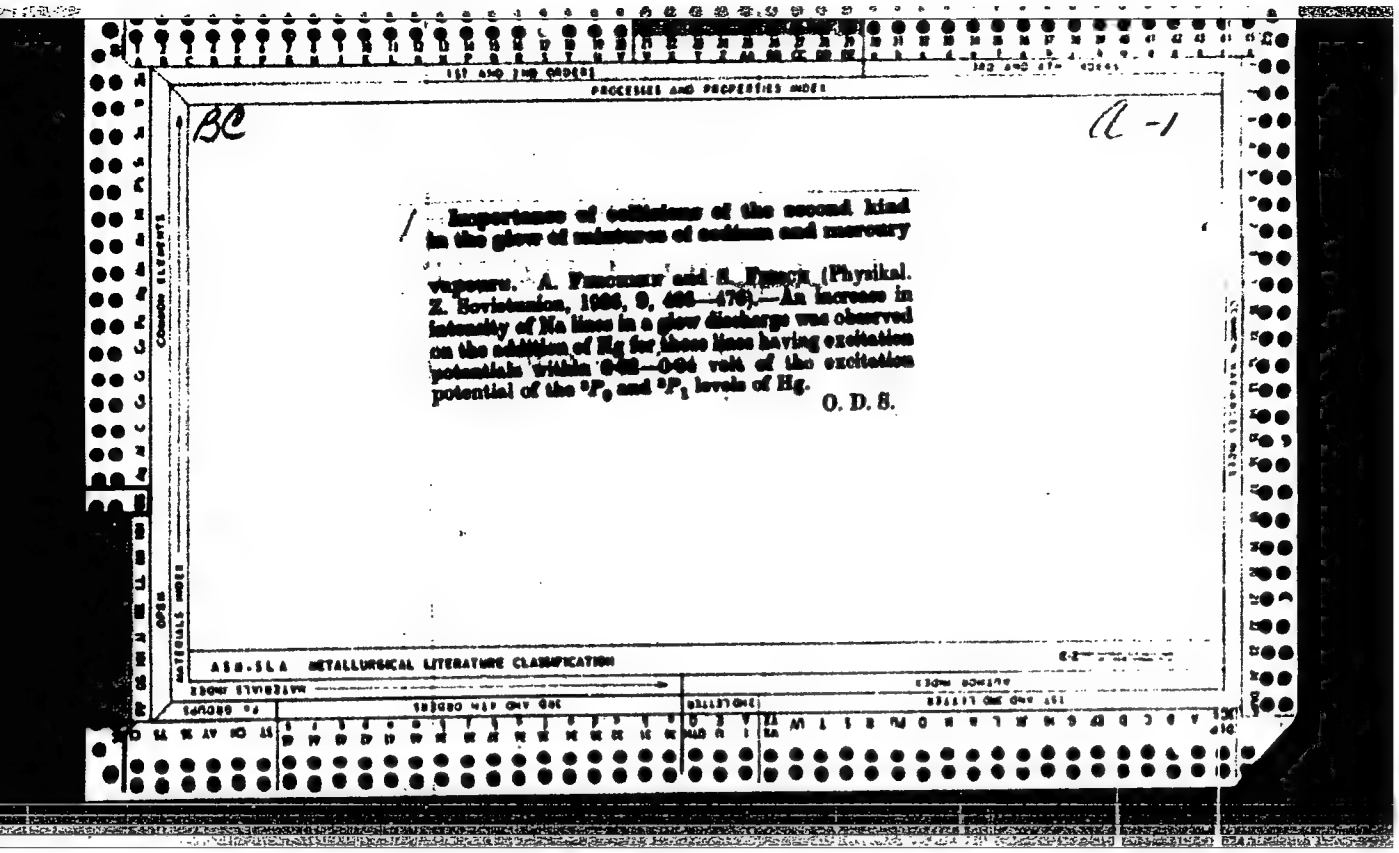


CA

3

The role of collisions of the second kind in gas discharge. S. E. Frish. *Bull. acad. sci. U. R. S. S., Classe sci. math. nat., Sér. phys.* 1936, 431 (in German 439-40) — An investigation of the role of collisions of the second kind in discharge tubes with a hollow cathode, contg. mixts. of Na-Hg vapors, shows a decided strengthening of the Na lines. The probability curve of collisions of the second kind is asymmetric: collisions of the second kind are less probable in case the excitation potential of the Hg atom is higher than that of the Na atom. It was detd. that the concns. of Hg atoms in the discharge tube in the metastable condition $^3P_0$ and in the condition $^3P_1$ are of the same magnitude. Mixts. of Na vapor with Mg, Cd and Zn vapors also were investigated. With Na-Zn vapors a decided strengthening of the red Na doublet $3P - 5S$, λ 6156 was observed. M. M.

ASA-SLA METALLURGICAL LITERATURE CLASSIFICATION



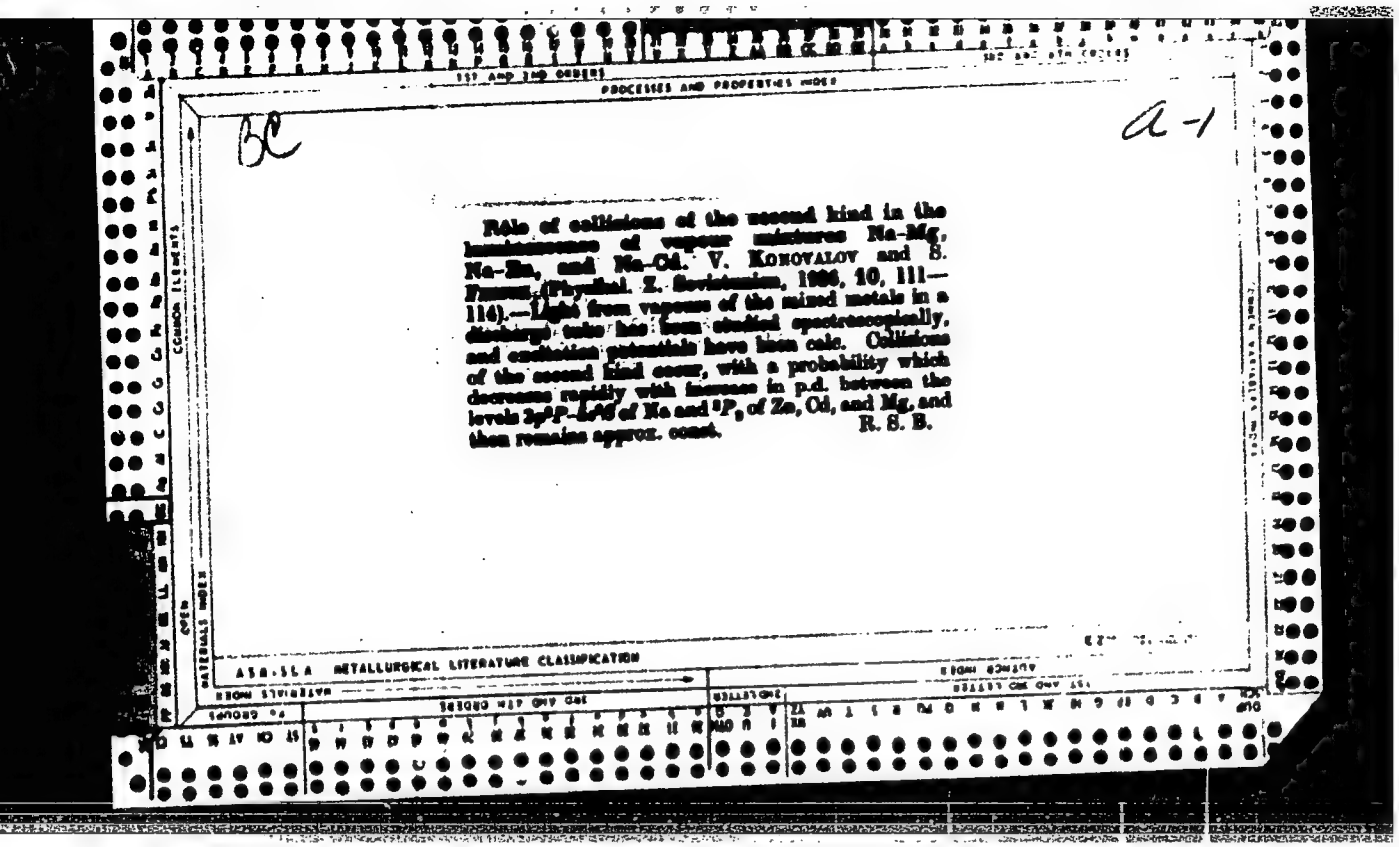
BC

A-1

Importance of collisions of the second kind in the glow of mixtures of sodium and mercury vapours. A. Pinchuk and S. Pinchuk (Physikal. Z. Sovietunion, 1936, 9, 466—476).—An increase in intensity of Na lines in a glow discharge was observed on the addition of Hg for those lines having excitation potentials within 0·02—0·04 volt of the excitation potential of the $^3P_0$ and $^3P_1$ levels of Hg.

O. D. S.

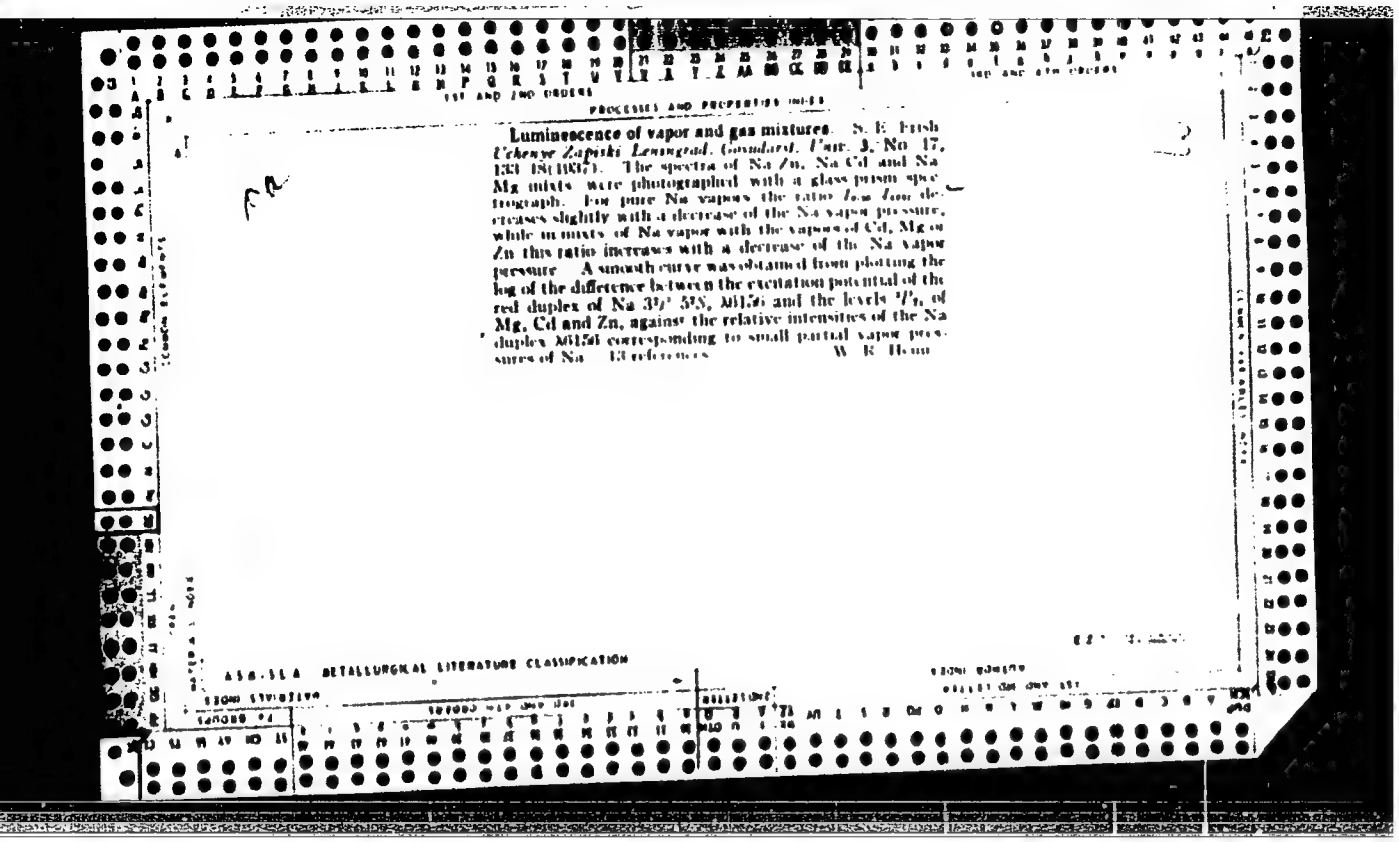
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



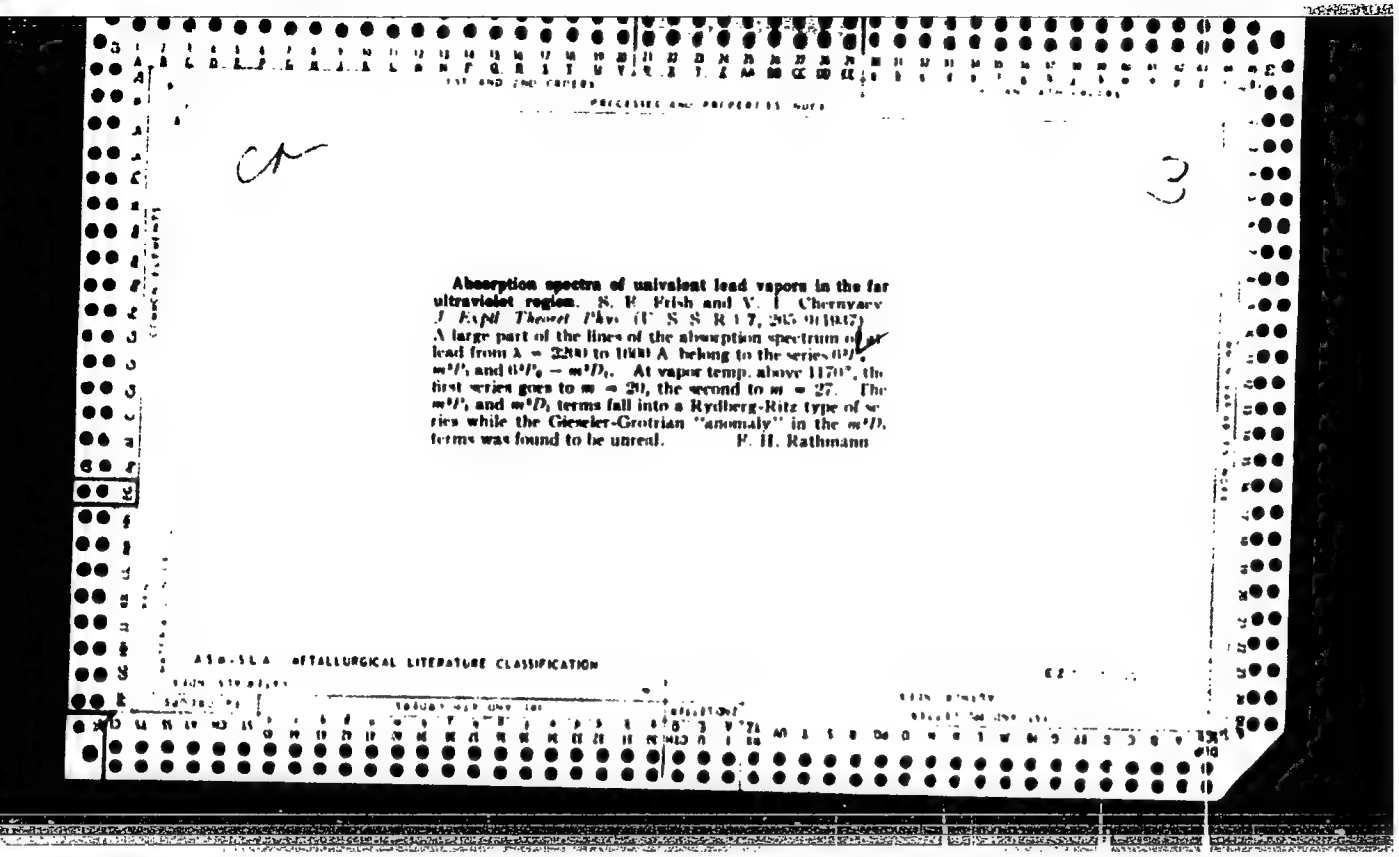
BC

a-1

Ratio of collisions of the second kind in the luminescence of vapour mixtures Na-Mg, Na-Zn, and Na-Cd. V. KONOVALOV and S. FRANZ. (Physikal. Z. Sowjetunion, 1936, 10, 111—114).—Light from vapours of the mixed metals in a discharge tube has been studied spectroscopically, and excitation potentials have been calc. Collisions of the second kind occur, with a probability which decreases rapidly with increase in p.d. between the levels $2p^5P-3s^3S$ of Na and $^3P_2$ of Zn, Cd, and Mg, and then remains approx. const. R. S. B.

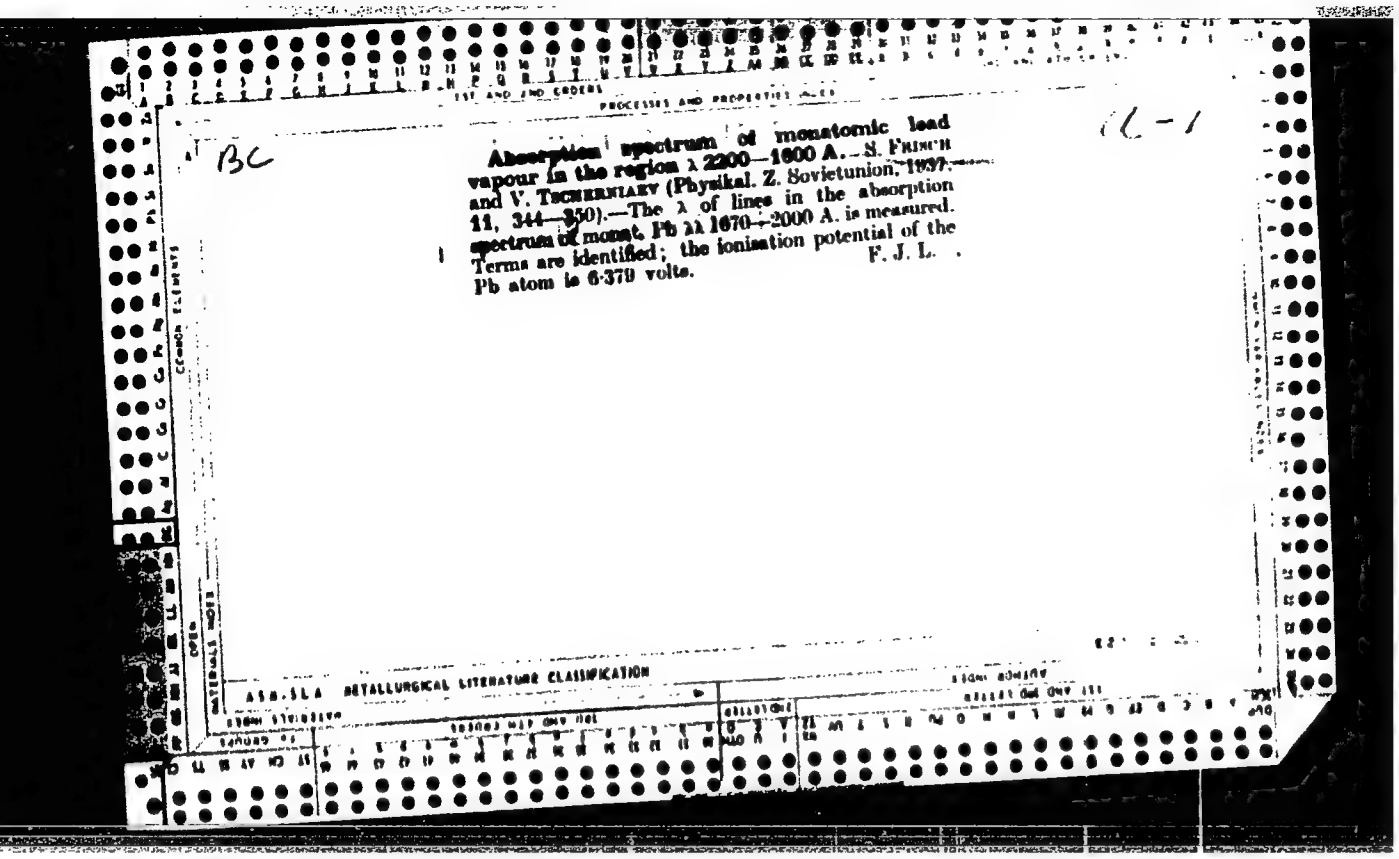


Luminescence of vapor and gas mixtures. S. E. Frish *Uchenye Zapiski Leningrad. Gosudarst. Univ.* 3, No 17, 133-58(1937). The spectra of Na/Zn, Na/Cd and Na/Mg mixts. were photographed with a glass prism spectrograph. For pure Na vapors the ratio I_{5688}/I_{5682} decreases slightly with a decrease of the Na vapor pressure, while in mixts. of Na vapor with the vapors of Cd, Mg or Zn this ratio increases with a decrease of the Na vapor pressure. A smooth curve was obtained from plotting the log of the difference between the excitation potential of the red duplex of Na 3^2P-3^2S, λ6156 and the levels $^3P_1$ of Mg, Cd and Zn, against the relative intensities of the Na duplex λ6154 corresponding to small partial vapor pressures of Na. 13 references. W. R. Hess

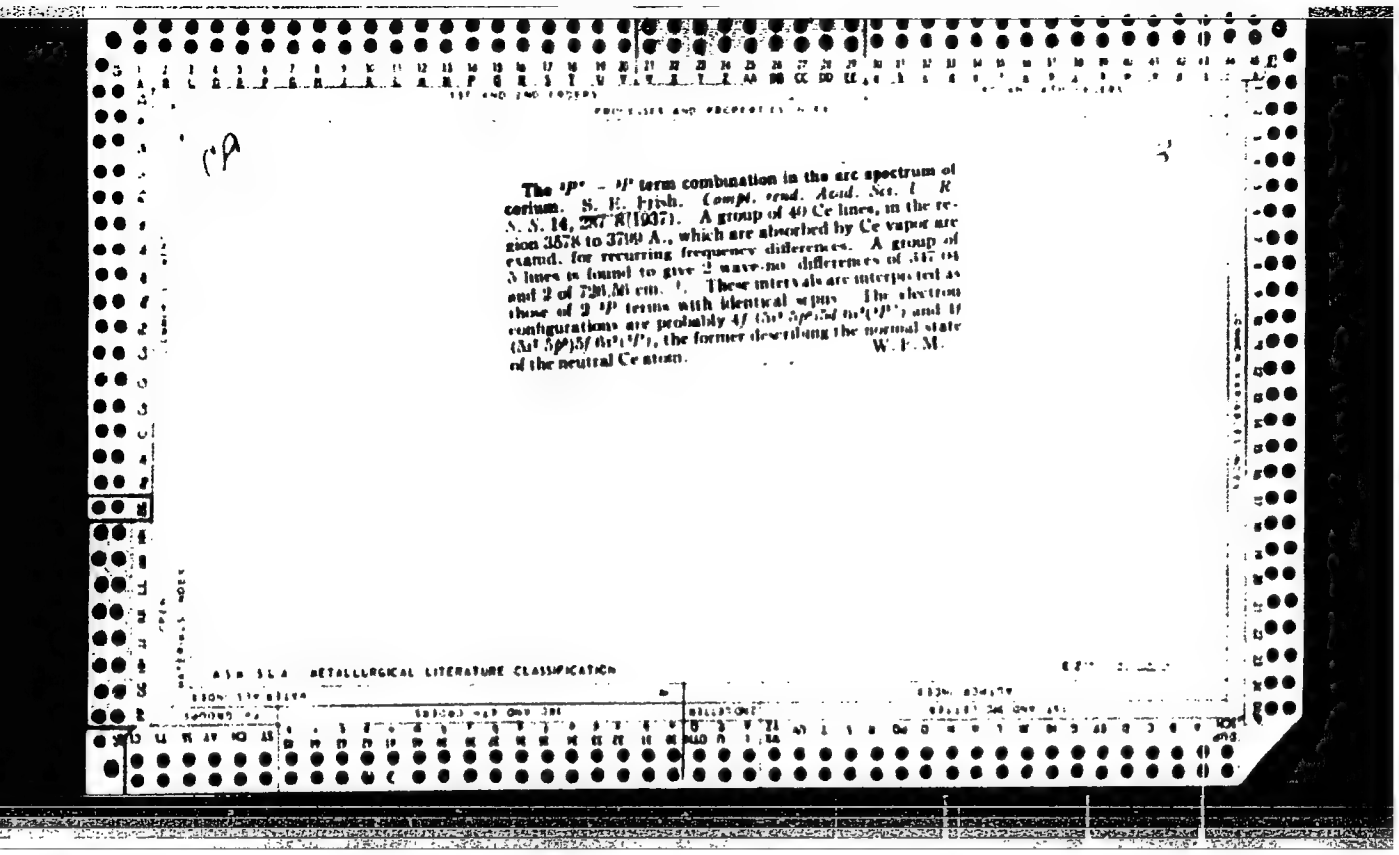


Absorption spectra of univalent lead vapors in the far ultraviolet region. S. E. Frish and V. I. Chernyaev. *J. Expl. Theoret. Phys. (U. S. S. R.)* 17, 205–9 (1947). A large part of the lines of the absorption spectrum of lead from $\lambda = 2380$ to 1000 A belong to the series $6^2P_1 - m^2P$, and $6^2P_0 - m^2D_1$. At vapor temp. above 1170°, the first series goes to $m = 20$, the second to $m = 27$. The m^2P, and m^2D_1 terms fall into a Rydberg-Ritz type of series while the Gieseler-Grotrian "anomaly" in the m^2D_1 terms was found to be unreal. P. H. Rathmann

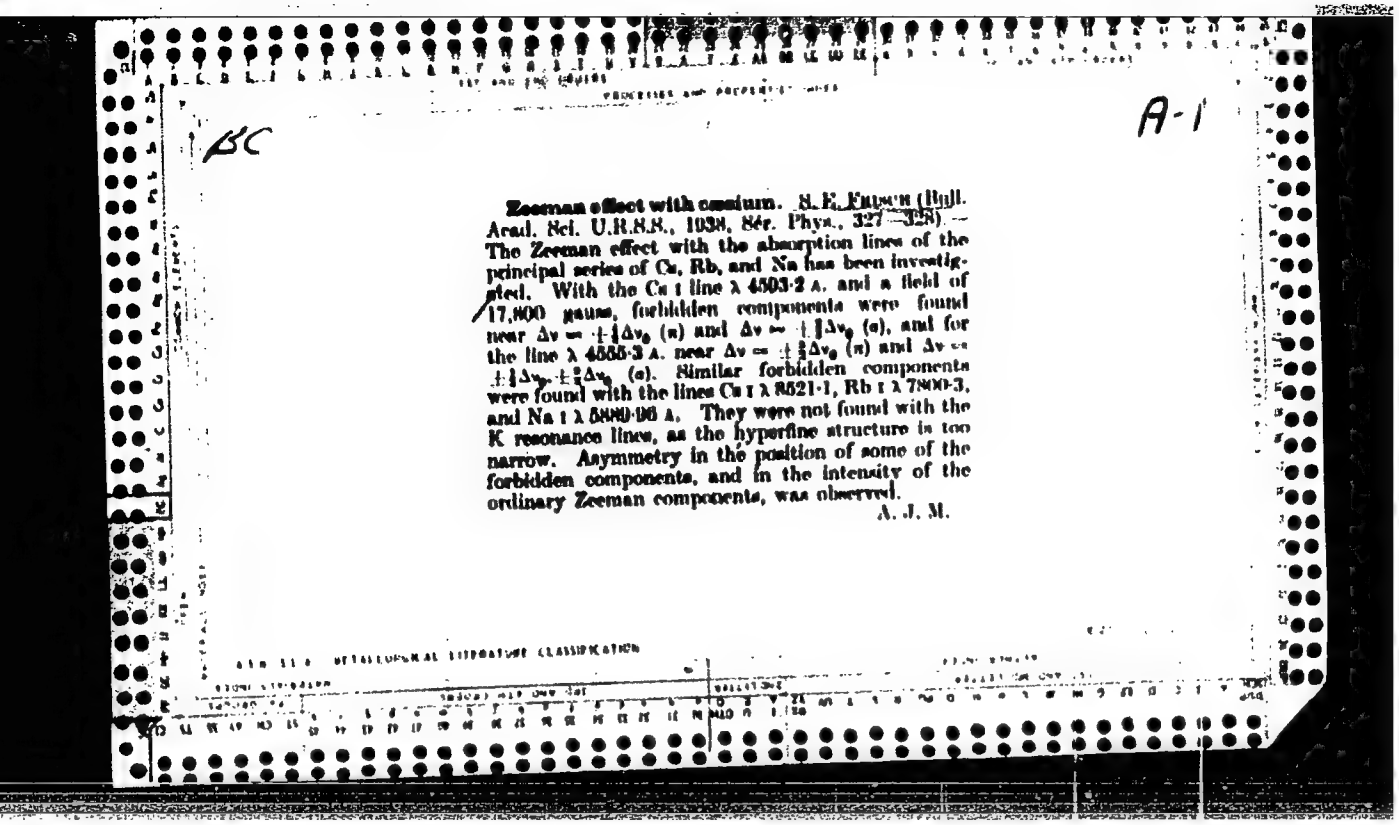
A 1 0 - S L A METALLURGICAL LITERATURE CLASSIFICATION



Absorption spectrum of monatomic lead vapour in the region λ 2200—1600 A.—S. French and V. Tscherniaev (Physikal. Z. Sovietunion, 1937, 11, 344—350).—The λ of lines in the absorption spectrum of monat. Pb in λλ 1670—2000 A. is measured. Terms are identified; the ionisation potential of the Pb atom is 6·379 volts. F. J. L.



The $sp^6 - sf^6$ term combination in the arc spectrum of cerium. S. E. Frish. *Compt. rend. Acad. Sci. U. R. S. S.* 14, 287–8 (1937). A group of 40 Ce lines, in the region 3578 to 3799 A., which are absorbed by Ce vapor are examd. for recurring frequency differences. A group of 5 lines is found to give 2 wave-no differences of 347.04 and 2 of 720.80 cm.$^{-1}$. These intervals are interpreted as those of 2 ^6P terms with identical sepns. The electron configurations are probably $4f\,(5s^2\,5p^6)5f\,6s^2(^1S^0)$ and $4f\,(5s^2\,5p^6)5f\,6s^2(^3S^0)$, the former describing the normal state of the neutral Ce atom. W. F. M.

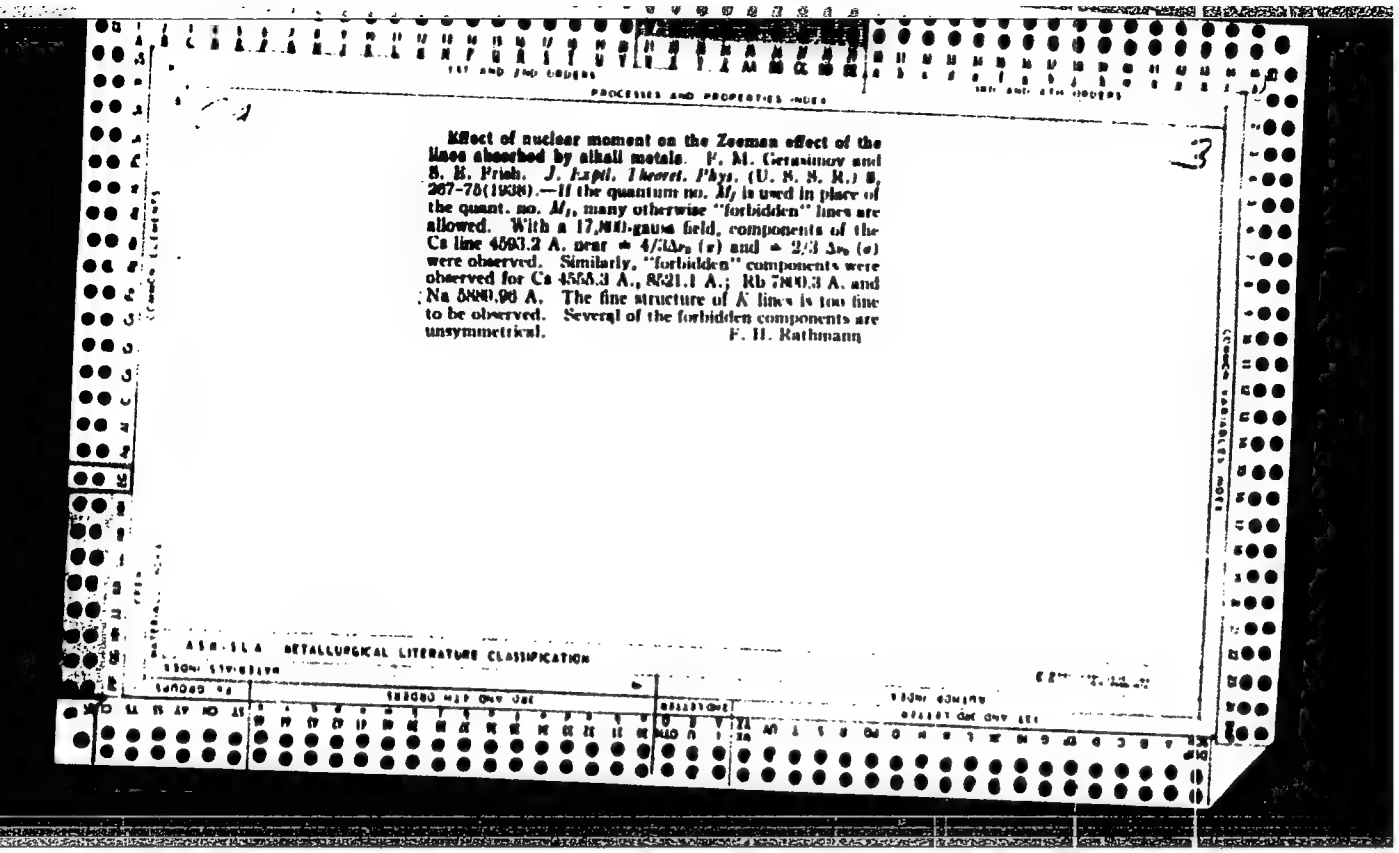


BC

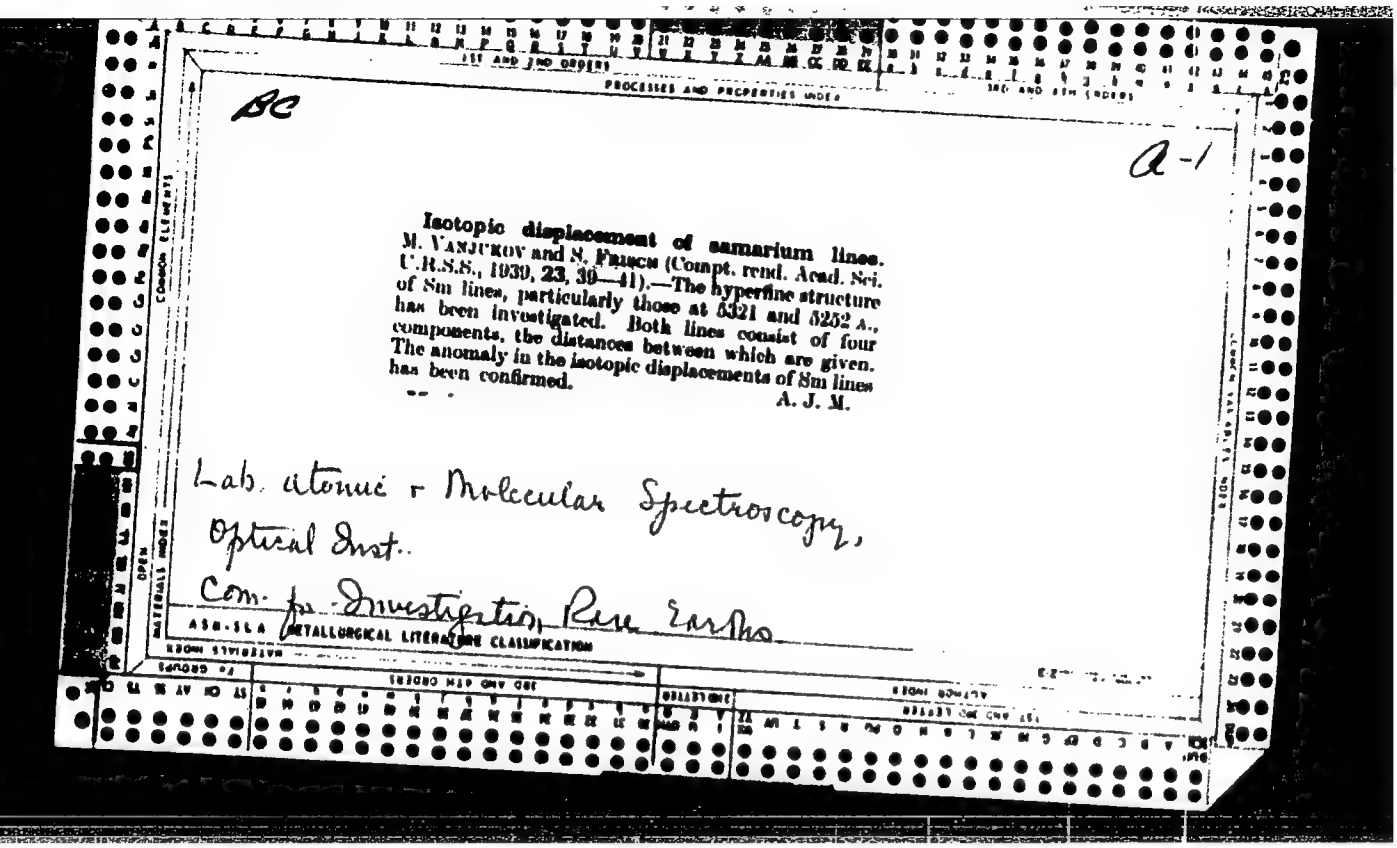
A-1

Zeeman effect with caesium. S. E. Frisch (Bull. Acad. Sci. U.R.S.S., 1938, 86r. Phys., 327—328). — The Zeeman effect with the absorption lines of the principal series of Cs, Rb, and Na has been investigated. With the Cs I line λ 4593·2 A. and a field of 17,800 gauss, forbidden components were found near $\Delta\nu = \pm\frac{1}{4}\Delta\nu_0$ (π) and $\Delta\nu = \pm\frac{1}{2}\Delta\nu_0$ (σ), and for the line λ 4555·3 A. near $\Delta\nu = \pm\frac{3}{4}\Delta\nu_0$ (π) and $\Delta\nu = \pm\frac{1}{4}\Delta\nu_0, \pm\frac{3}{4}\Delta\nu_0$ (σ). Similar forbidden components were found with the lines Cs I λ 8521·1, Rb I λ 7800·3, and Na I λ 5889·96 A. They were not found with the K resonance lines, as the hyperfine structure is too narrow. Asymmetry in the position of some of the forbidden components, and in the intensity of the ordinary Zeeman components, was observed.

A. J. M.



Effect of nuclear moment on the Zeeman effect of the lines absorbed by alkali metals. F. M. Gerasimov and S. E. Frish. *J. Exptl. Theoret. Phys.* (U. S. S. R.) 8, 267–75(1938).—If the quantum no. M_I is used in place of the quant. no. M_J, many otherwise "forbidden" lines are allowed. With a 17,800-gauss field, components of the Cs line 4593.2 A. near $= 4/5\Delta\nu_0$ (π) and $= 2/3\ \Delta\nu_0$ (σ) were observed. Similarly, "forbidden" components were observed for Cs 4555.3 A., 8521.1 A.; Rb 7800.3 A. and Na 5890.96 A. The fine structure of K lines is too fine to be observed. Several of the forbidden components are unsymmetrical. F. H. Rathmann



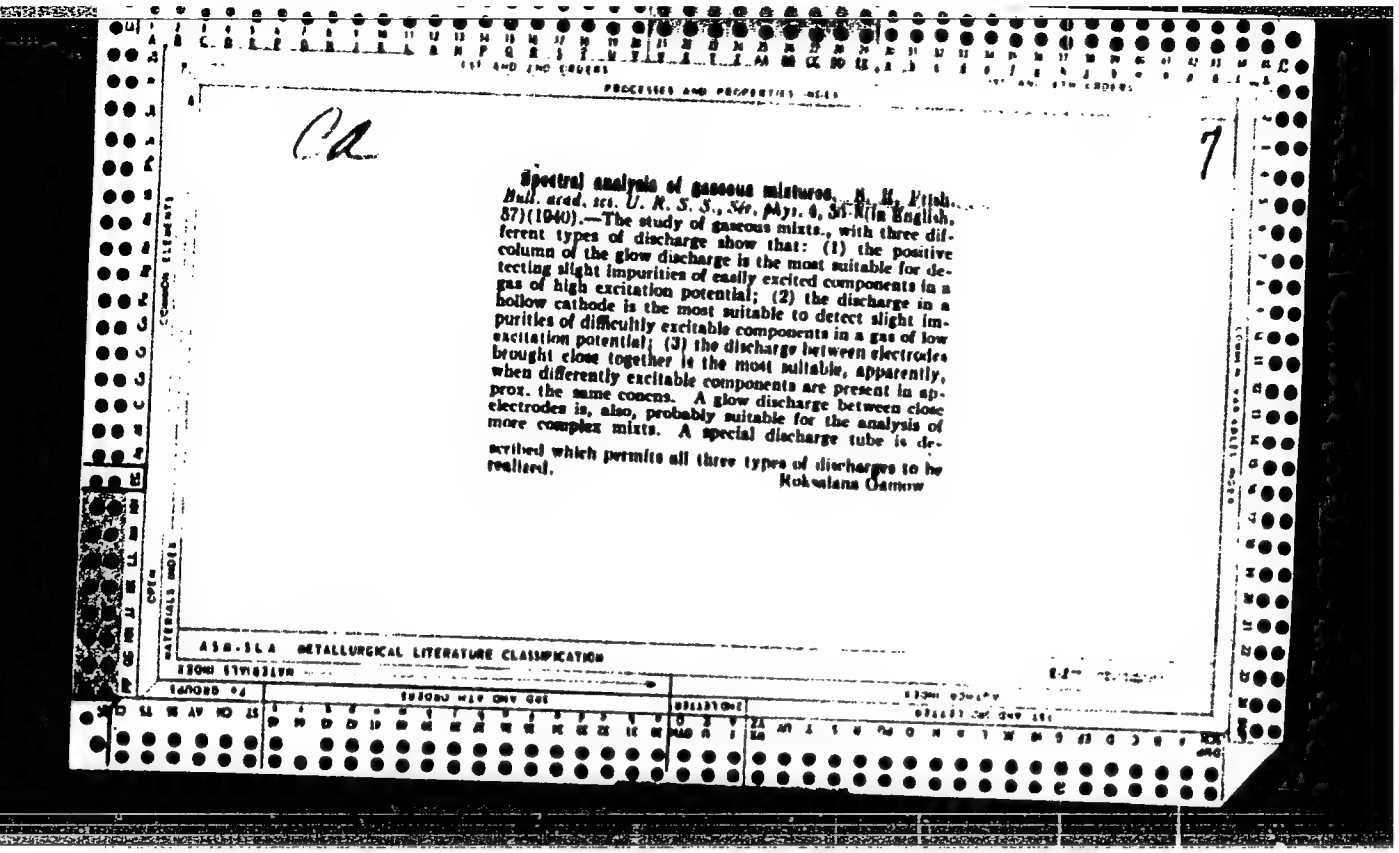
BC

A-1

Isotopic displacement of samarium lines. M. VANJUKOV and S. FRISCH (Compt. rend. Acad. Sci. U.R.S.S., 1939, **23**, 39—41).—The hyperfine structure of Sm lines, particularly those at 5321 and 5252 A., has been investigated. Both lines consist of four components, the distances between which are given. The anomaly in the isotopic displacements of Sm lines has been confirmed.

A. J. M.

Lab. atomic + Molecular Spectroscopy, Optical Inst.. Com. for Investigation, Rare Earths



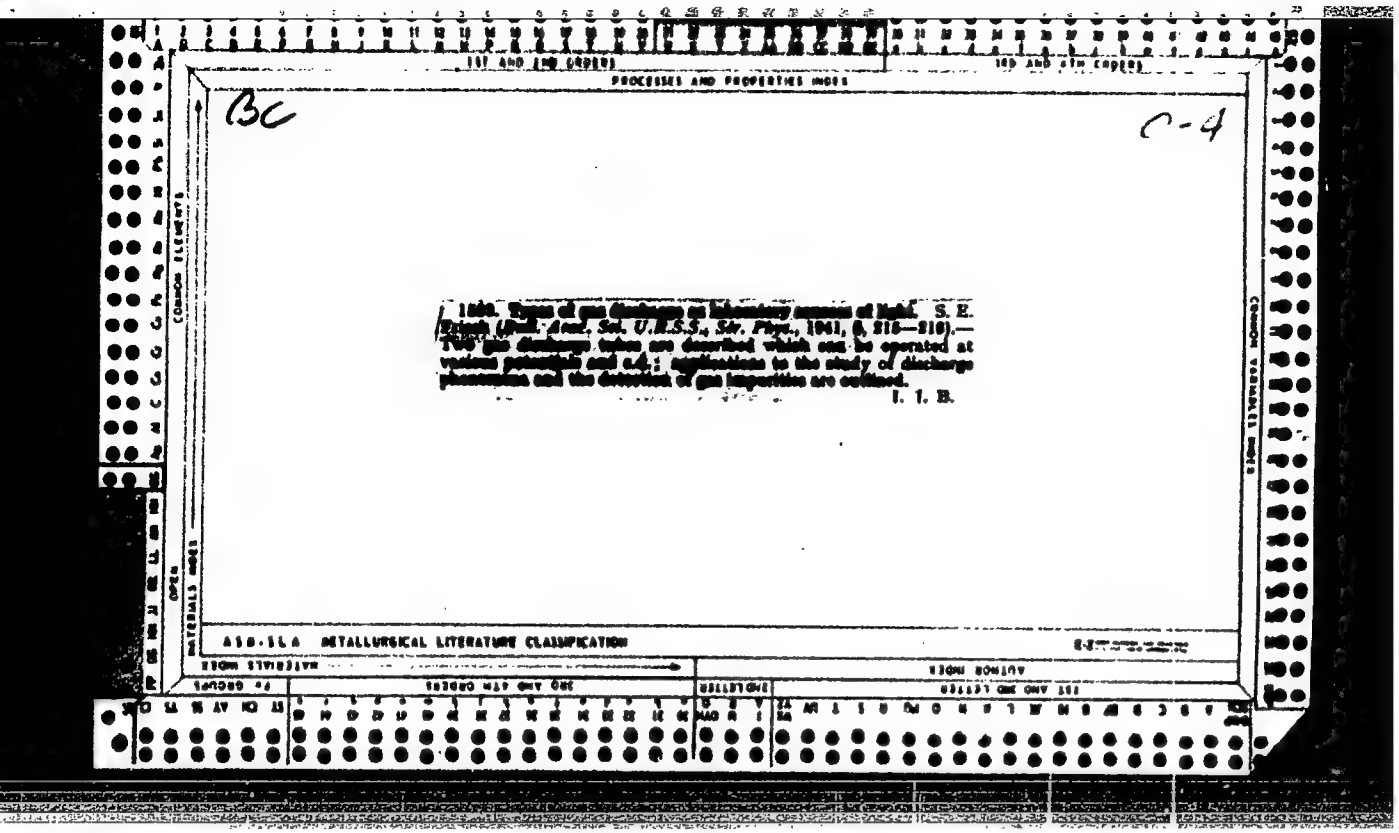
Ca

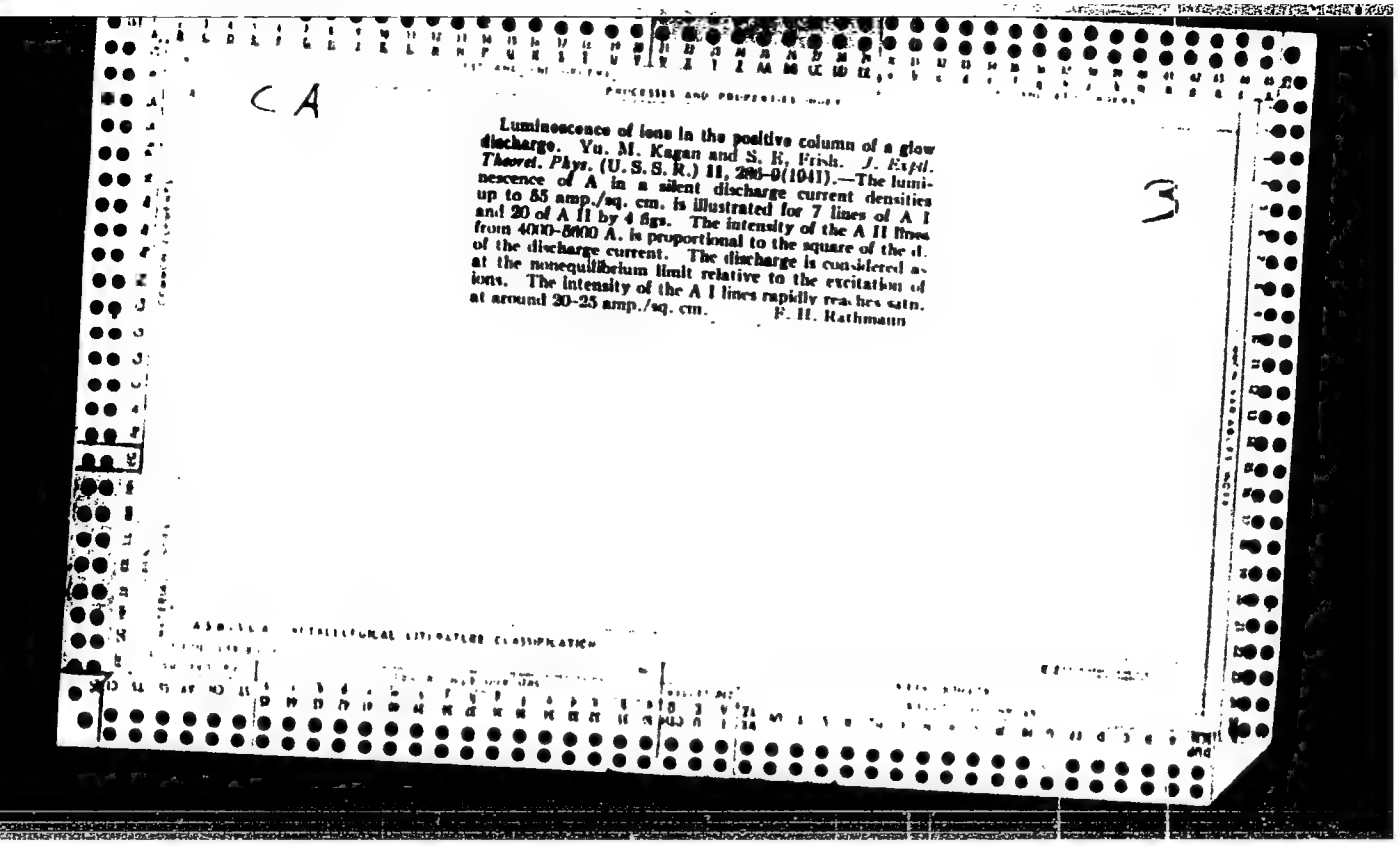
7

Spectral analysis of gaseous mixtures. N. M. Polish. *Bull. acad. sci. U. R. S. S., Sér. phys.* 4, 51-8 (in English, 57)(1940).—The study of gaseous mixts., with three different types of discharge show that: (1) the positive column of the glow discharge is the most suitable for detecting slight impurities of easily excited components in a gas of high excitation potential; (2) the discharge in a hollow cathode is the most suitable to detect slight impurities of difficultly excitable components in a gas of low excitation potential; (3) the discharge between electrodes brought close together is the most suitable, apparently, when differently excitable components are present in approx. the same concns. A glow discharge between close electrodes is, also, probably suitable for the analysis of more complex mixts. A special discharge tube is described which permits all three types of discharges to be realized.

Roksolana Gamow

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

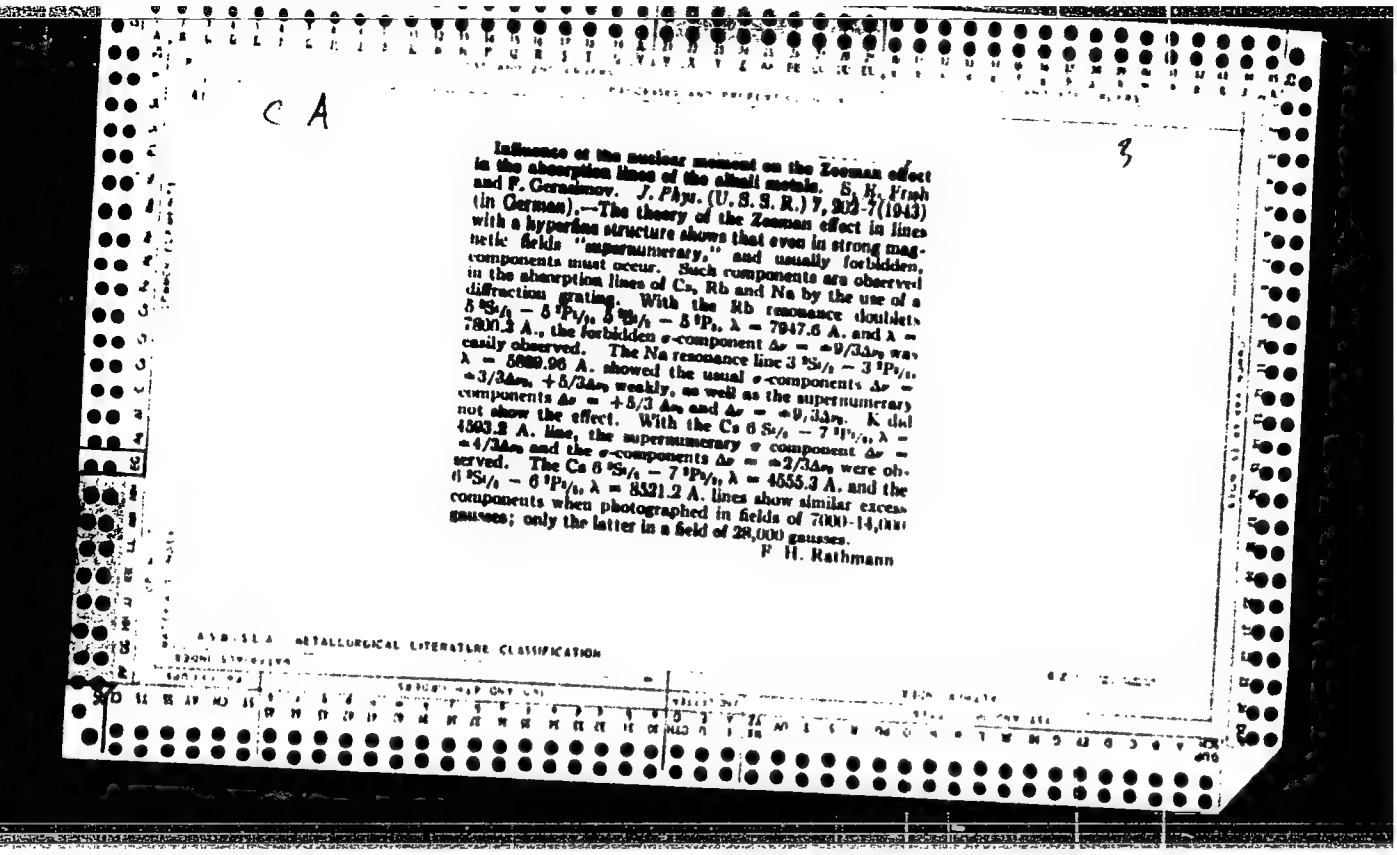




CA

3

Luminescence of ions in the positive column of a glow discharge. Yu. M. Kagan and S. E. Frish. *J. Exptl. Theoret. Phys.* (U. S. S. R.) **11**, 286–9(1941).—The luminescence of A in a silent discharge current densities up to 55 amp./sq. cm. is illustrated for 7 lines of A I and 20 of A II by 4 figs. The intensity of the A II lines from 4000–5000 A. is proportional to the square of the d. of the discharge current. The discharge is considered as at the nonequilibrium limit relative to the excitation of ions. The intensity of the A I lines rapidly reaches satn. at around 20–25 amp./sq. cm. F. H. Rathmann



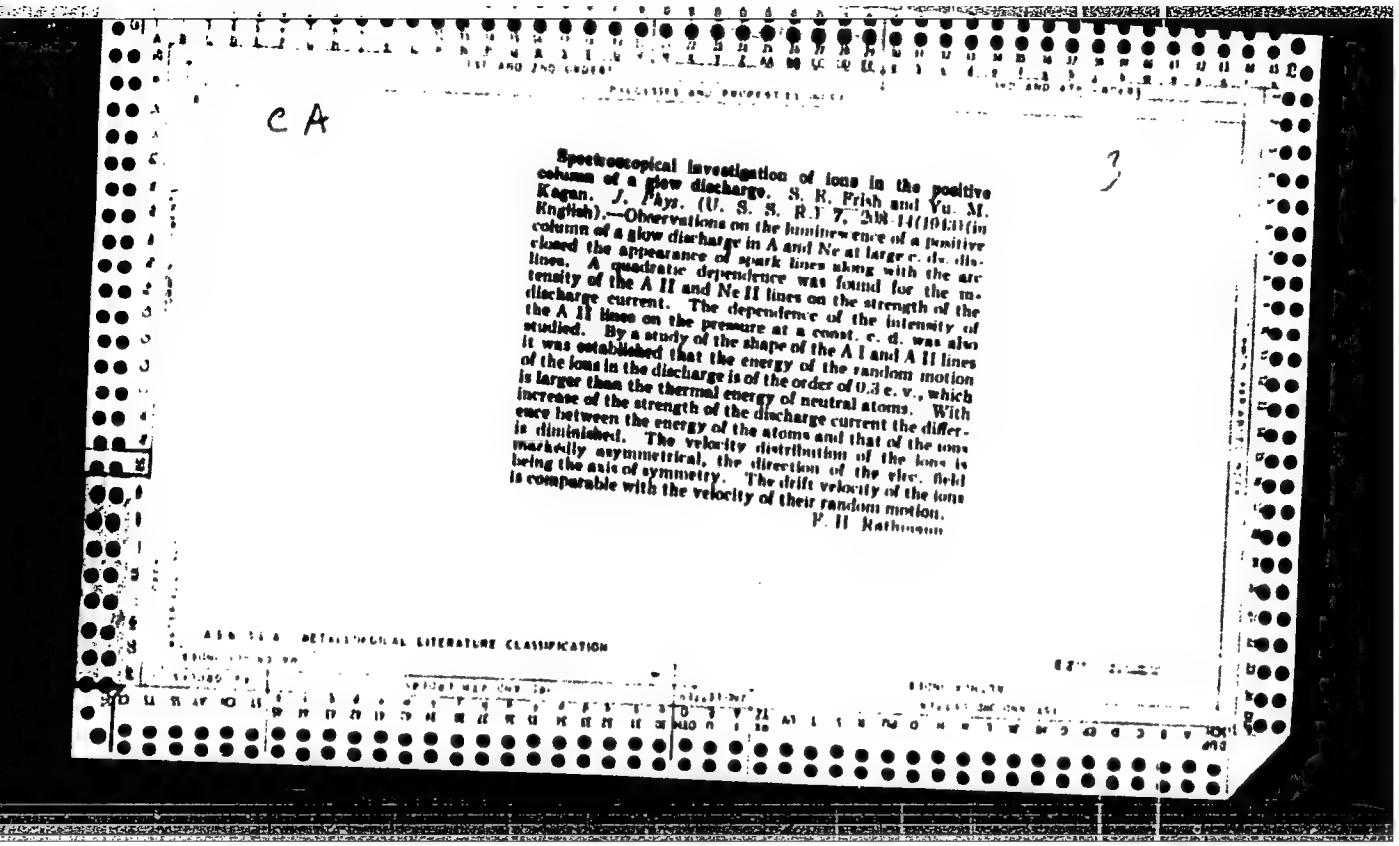
C A

3

Influence of the nuclear moment on the Zeeman effect in the absorption lines of the alkali metals. S. E. Frish and F. Gerasimov. *J. Phys.* (U. S. S. R.) 7, 202-7(1943) (in German).—The theory of the Zeeman effect in lines with a hyperfine structure shows that even in strong magnetic fields "supernumerary," and usually forbidden, components must occur. Such components are observed in the absorption lines of Cs, Rb and Na by the use of a diffraction grating. With the Rb resonance doublets $5\,^2S_{1/2} - 5\,^2P_{1/2}$, $5\,^2S_{1/2} - 5\,^2P_3$, $\lambda = 7947.6$ A. and $\lambda = 7800.3$ A., the forbidden σ-component $\Delta\nu = \pm 9/3\Delta\nu_0$ was easily observed. The Na resonance line $3\,^2S_{1/2} - 3\,^2P_{1/2}$, $\lambda = 5889.96$ A. showed the usual σ-components $\Delta\nu = \pm 3/3\Delta\nu_0$, $+5/3\Delta\nu_0$ weakly, as well as the supernumerary components $\Delta\nu = +5/3\,\Delta\nu_0$ and $\Delta\nu = \pm 9/3\Delta\nu_0$. K did not show the effect. With the Cs $6\,S_{1/2} - 7\,^2P_{1/2}$, $\lambda = 4593.2$ A. line, the supernumerary π component $\Delta\nu = \pm 4/3\Delta\nu_0$ and the σ-components $\Delta\nu = \pm 2/3\Delta\nu_0$ were observed. The Cs $6\,^2S_{1/2} - 7\,^2P_{3/2}$, $\lambda = 4555.3$ A. and the $6\,^2S_{1/2} - 6\,^2P_{3/2}$, $\lambda = 8521.2$ A. lines show similar excess components when photographed in fields of 7000-14,000 gausses; only the latter in a field of 28,000 gausses.

F. H. Rathmann

A.S.T.M. METALLURGICAL LITERATURE CLASSIFICATION

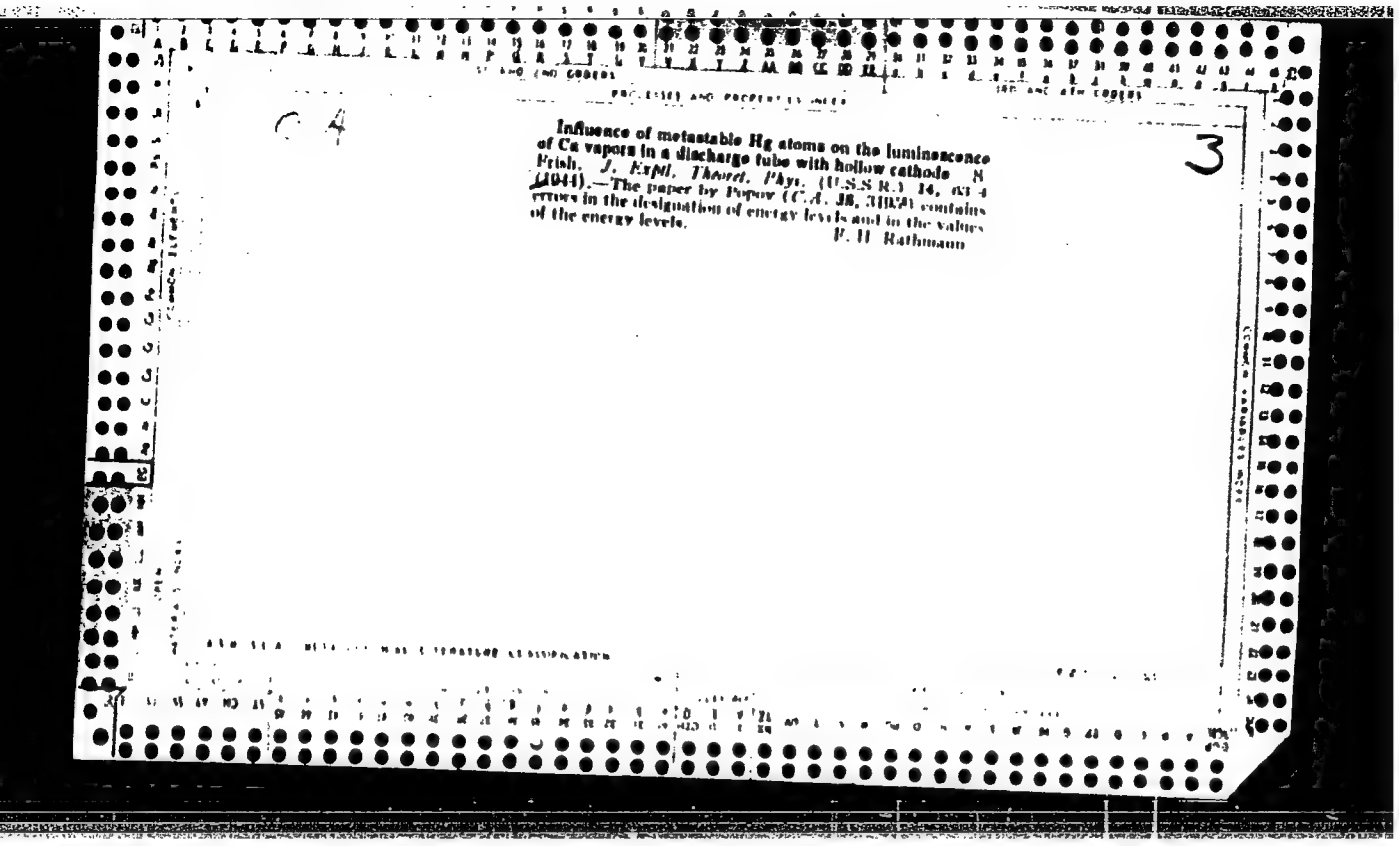


CA

Spectroscopical investigation of ions in the positive column of a glow discharge. S. R. Frish and Yu. M. Kagan. *J. Phys.* (U. S. S. R.) 7, 388-14(1943)(in English).—Observations on the luminescence of a positive column of a glow discharge in A and Ne at large c. d. disclosed the appearance of spark lines along with the arc lines. A quadratic dependence was found for the intensity of the A II and Ne II lines on the strength of the discharge current. The dependence of the intensity of the A II lines on the pressure at a const. c. d. was also studied. By a study of the shape of the A I and A II lines it was established that the energy of the random motion of the ions in the discharge is of the order of 0.3 e. v., which is larger than the thermal energy of neutral atoms. With increase of the strength of the discharge current the difference between the energy of the atoms and that of the ions is diminished. The velocity distribution of the ions is markedly asymmetrical, the direction of the elec. field being the axis of symmetry. The drift velocity of the ions is comparable with the velocity of their random motion.

P. H. Rathmann

ASTIA METALLURGICAL LITERATURE CLASSIFICATION

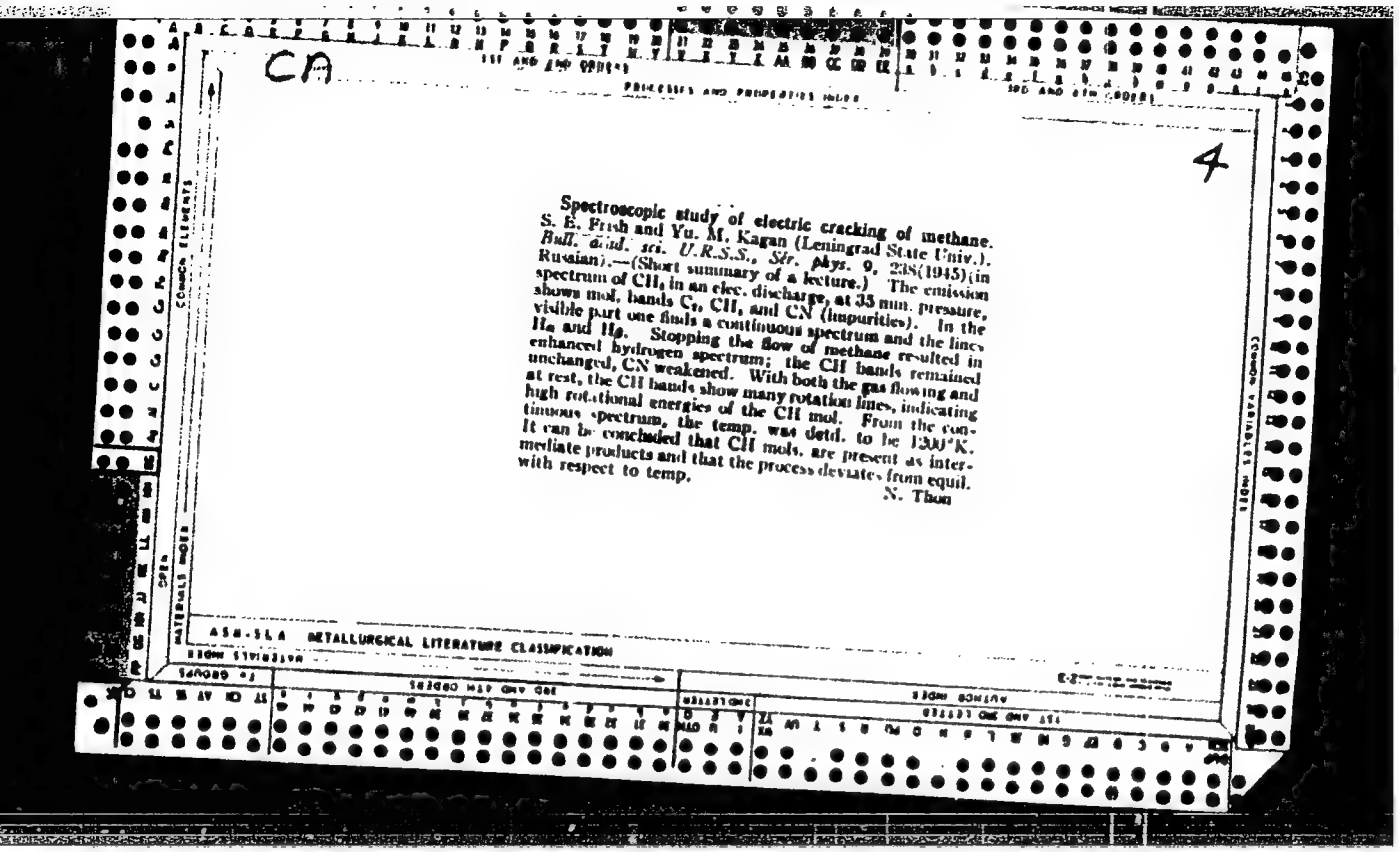


C 4

3

Influence of metastable Hg atoms on the luminescence of Cs vapors in a discharge tube with hollow cathode N. Prish. *J. Expl. Theoret. Phys.* (U.S.S.R.) 14, 63-4 (1944).—The paper by Popov (*C.A.* 38, 3183) contains errors in the designation of energy levels and in the values of the energy levels.

P. H. Rathmann



CA

4

Spectroscopic study of electric cracking of methane. S. E. Frish and Yu. M. Kagan (Leningrad State Univ.). *Bull. acad. sci. U.R.S.S., Sér. phys.* 9, 238(1945)(in Russian).—(Short summary of a lecture.) The emission spectrum of CH_4 in an elec. discharge, at 33 mm. pressure, shows mol. bands C_2, CH, and CN (impurities). In the visible part one finds a continuous spectrum and the lines H_α and H_β. Stopping the flow of methane resulted in enhanced hydrogen spectrum; the CH bands remained unchanged, CN weakened. With both the gas flowing and at rest, the CH bands show many rotation lines, indicating high rotational energies of the CH mol. From the continuous spectrum, the temp. was detd. to be 1300°K. It can be concluded that CH mols. are present as intermediate products and that the process deviates from equil. with respect to temp.

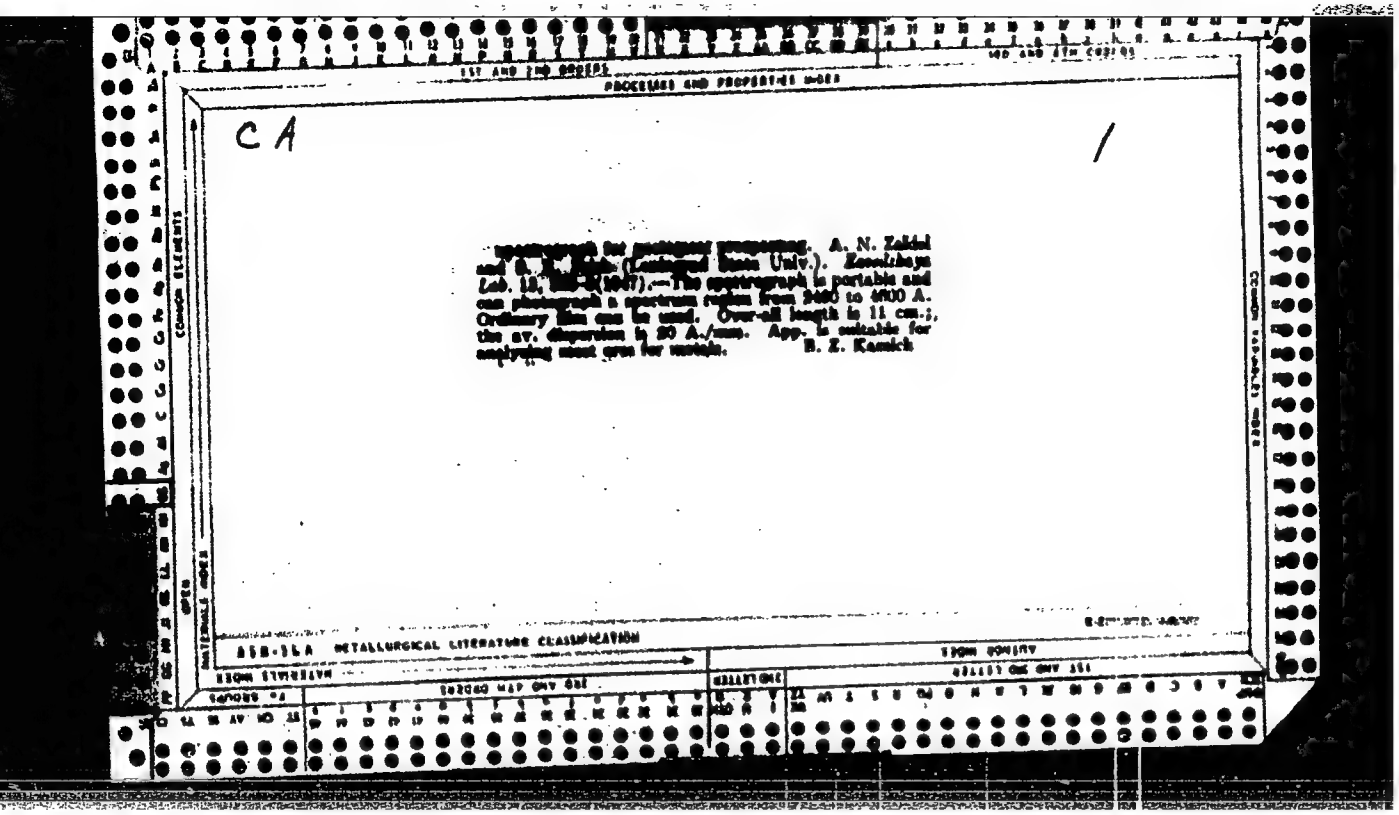
N. Thon

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

FRISH, S.E., professor, chlen-korrespondent Akademii nauk SSSR.

Elementary particles of matter. Fiz.v shkole 7 no.1:3-13 '47.
(MLRA 6:11)

1. Leningradskiy gosudarstvennyy universitet. (Particles)



CA

3

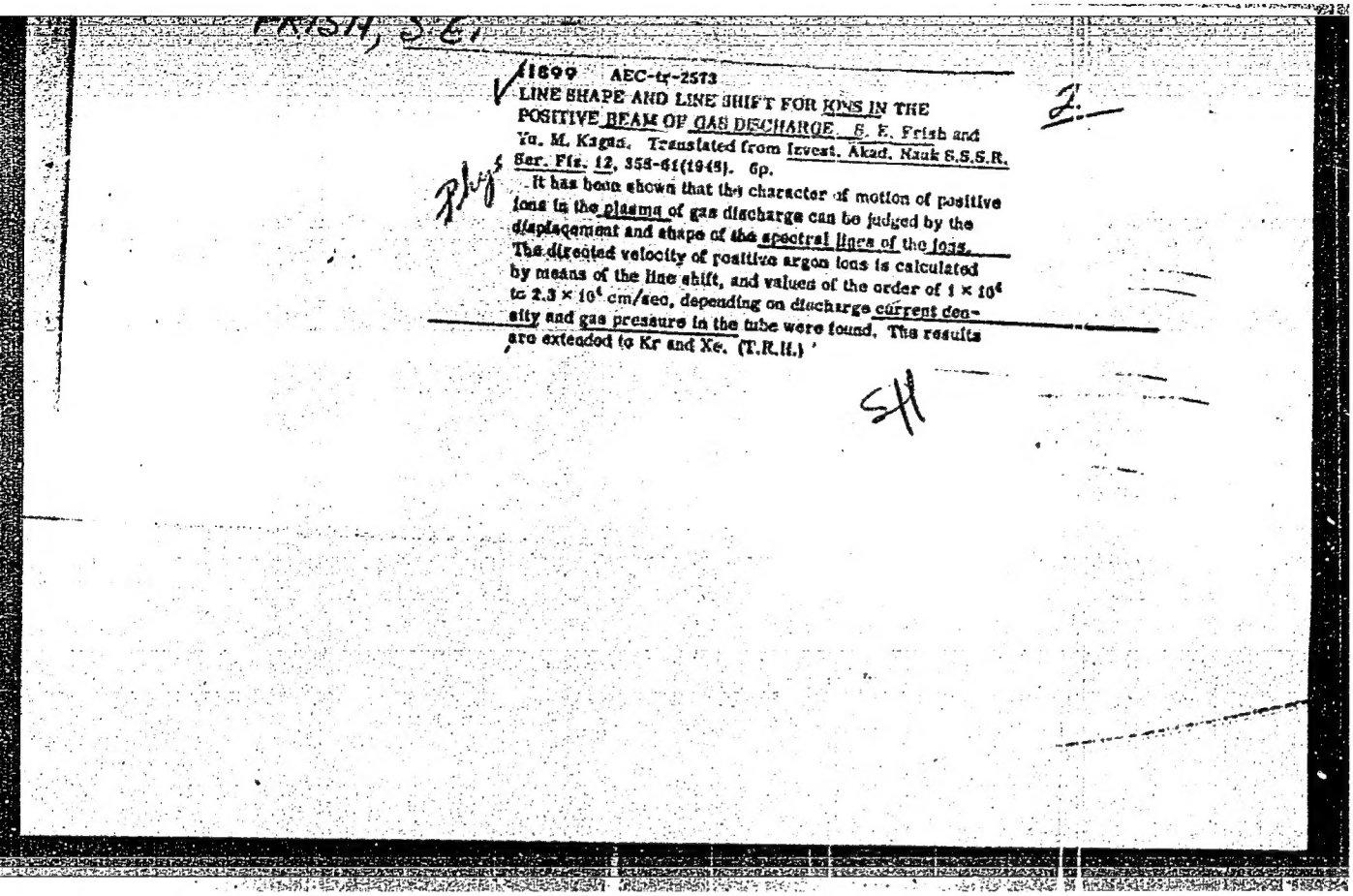
Spectroscopic study of the motion of ions in the plasma S. E. Frish and Yu. M. Kagan (Leningrad Univ.). *Zhur. Exptl. Teoret. Fiz.* 17, 577 81(1947).—Interferometric measurements made on spectral lines of A II along a quartz capillary in which the discharge takes place, show a displacement absent on lines of A I. This displacement of the magnitude of 0.001 ± 0.001 A. is attributed to the Doppler effect caused by the translatory movement of ions along the capillary with the velocity of $1 \times 10^5 - 2.3 \times 10^5$ cm./sec. This is confirmed by: (a) the ratio of displacements of lines 5009 and 4200 is equal to the ratio of wave lengths as predicted by the theory; (b) the displacement is proportional to the cosine of the viewing angle with the axis of the capillary; (c) the velocities calcd. from the displacements at different pressures (0.2–3.5 mm.) and discharge currents (100–600 ma) have been compared with a theoretically derived formula (for A) $v = 7 \times 10^5 (T/273)^{1/2} (E/p)[1 + (E_r/E)^2]^{-1/2}$ (E measured fall gradient, E_r calcd. radial gradient) and found to be in satisfactory agreement.

S. Pakswer

11901 AEC-tr-2685

SPECTROSCOPY OF THE GAS DISCHARGE. S. E. Frish and Yu. M. Kagan. Translated from Vestnik Leningrad Univ., No. 1, 12-40(1948). 93p.

The extent of gas discharge theory and experimentation is briefly summarized. This summary is followed by an account of laboratory work on stepwise excitation, spectroscopic radiations of ions in a plasma, cascade transitions, and collisions of the second kind. (D.E.B.)



11899 AEC-tr-2573

LINE SHAPE AND LINE SHIFT FOR IONS IN THE POSITIVE BEAM OF GAS DISCHARGE. S. E. Frish and Yu. M. Kagan. Translated from Invest. Akad. Nauk S.S.R. Ser. Fiz. 12, 355-61(1948). 6p.

It has been shown that the character of motion of positive ions in the plasma of gas discharge can be judged by the displacement and shape of the spectral lines of the ions. The directed velocity of positive argon ions is calculated by means of the line shift, and values of the order of 1×10^6 to 2.3×10^6 cm/sec, depending on discharge current density and gas pressure in the tube were found. The results are extended to Kr and Xe. (T.R.H.)

FRISH, S.E.

(3)

Spectroscopic study of the movement of ions in a plasma. II. S. E. Frish and Yu. M. Kagan (Leningrad State Univ.). *Zhur. Eksptl. i. Teoret. Fiz.* 18, 519–24(1948); cf. *C.A.* 44, 6200d.—By using the calibrating interferometer device of Fabry and Perot, F. and K. studied the contours of the spectral lines of ions and of neutral atoms of argon as a function of the strength of the discharge current and the pressure of the gas. Lines which are due to ions are much wider than are lines due to neutral atoms. Lines of ions are wider when viewed across the capillary than when viewed along the capillary. Using the half-widths of the lines, F. and K. calcd. the ionic temps., and compared these with the temp. of the at. gas. During observations along the capillary, the course of the ionic temp. as a function of the pressure is analogous to that already previously established for the excited lines of ions. The results obtained are interpreted from the point of view of transfer-motion of ions in an elec. field in a plasma. Franz H. Rathmann

A

USSR/Physics
Spectrum Analysis
Furnaces

Aug 48

PA 9/49T92

"Excitation Mechanisms of Spectrum Lines in a High-Temperature Vacuum Furnace," S. E. Frish, N. P. Penkin, A. M. Shukhtin, Phys Inst, Leningrad State U, 3 pp

"Zhur Eksper i Teoret Fiz" Vol XVIII, No 8

Shows by spectrum line conversion method, that in a high-temperature vacuum furnace, atoms are equally distributed on excitation level. Temperature corresponds to distribution within limits of measuring error and coincides with temperature of furnace wall.

9/49T92

USSR/Physics (Contd)

Aug 48

Determined, from this, temperature characteristics of spectrum line excitation in a vacuum furnace.

9/49T92